PB-230 830

POLLUTION OF THE INTERSTATE AND INTRASTATE WATERS OF THE UPPER MISSISSIPPI RIVER AND ITS TRIBUTARIES - MINNESOTA AND WISCONSIN. PROCEEDINGS OF CONFERENCE, SECOND SESSION, HELD AT MINNEAPOLIS, MINNESOTA ON FEBRUARY 28, MARCH 1 AND 20, 1967. VOLUME 3

Federal Water Pollution Control Administration
Washington, D. C.

20 March 1967

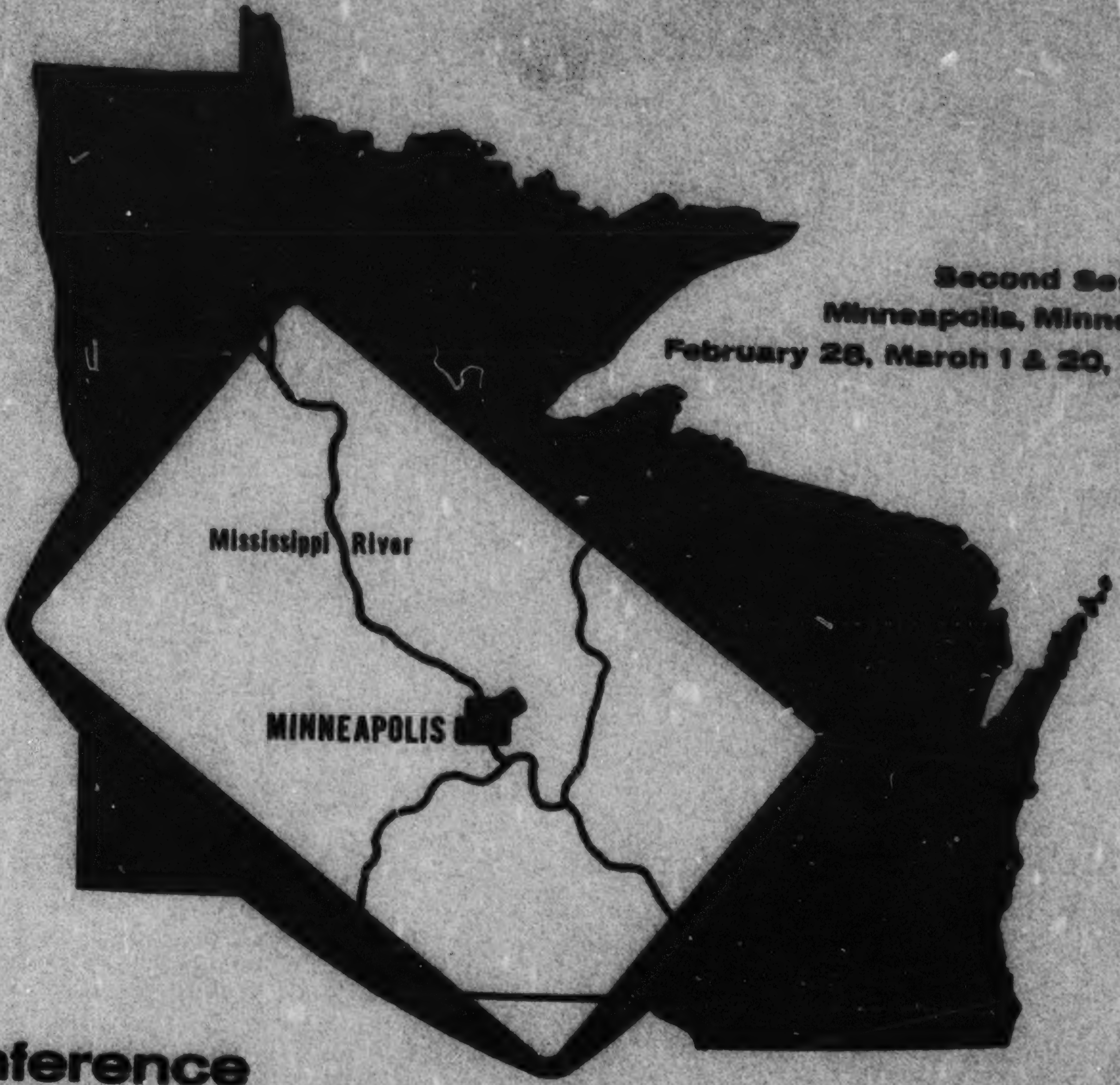
DISTRIBUTED BY:

NTIS
National Technical Information Service
U. S. DEPARTMENT OF COMMERCE
5285 Port Royal Road, Springfield Va. 22151

PB 230 830

PROCEEDINGS

Volume 3



Second Session
Minneapolis, Minnesota
February 28, March 1 & 20, 1967

Conference

In the Matter of Pollution of the Interstate and Intrastate Waters of the Upper Mississippi River and its Tributaries - Minnesota and Wisconsin

Reproduced by
NATIONAL TECHNICAL
INFORMATION SERVICE
U S Department of Commerce
Springfield VA 22151

U. S. Department of the Interior
Federal Water Pollution Control Administration

227

EXECUTIVE SESSION of the Second Session of the Conference in the Matter of Pollution of the Interstate and Intrastate Waters of the Upper Mississippi River and Its Tributaries in the States of Wisconsin and Minnesota, convened at 9:20 a.m., on Monday, March 20, 1967, at the Leamington Hotel, Minneapolis, Minnesota.

PRESIDING: Mr. Murray Stein, Assistant Commissioner for Enforcement, Federal Water Pollution Control Administration, Department of the Interior

CONFEREES:

Dr. M. M. Hargraves, Chairman of the Minnesota Water Pollution Control Commission

Lyle H. Smith, Executive Engineer, Minnesota Water Pollution Control Commission

Chester S. Wilson, Special Assistant, Attorney General, State of Minnesota

CONFEREES (Continued):

Dr. Demetrius G. Jelatis, Mayor of Red Wing, Minnesota

Freeman Holmer, Director, Department of Resources, State of Wisconsin

Theodore F. Wisniewski, Acting Chief, Division of Water Resources, Department of Resource Development, State of wisconsin

. J. Muegge, Member, Wisconsin Water esource Advisory Board

Andrew C. Damon, Legal Counsel to the Department of Resource Development, State of Wisconsin

P. Odegard, Executive Director, Minnesota-Wisconsin Boundary Area Commission

H. W. Poston, Acting Regional Director, Great Lakes Region, Federal Water Pollution Control Administration, Department of the Interior

LIST OF ATTENDANCE:

John P. Badalich, City Engineer, City of South St. Paul, Municipal Building, 125 - 3rd Ave. No., South St. Paul, Minnesota.

Ken Berglund, News Representative, McGraw Hill Publications, 5520 Thomas Ave. So., Minneapolis, Minnesota.

Lawrence H. Briemhurst, Associate Public Health Engineer, Minnesota Department of Health, University of Minnesota Campus, Minneapolis, Minnesota.

Robert J. Carroll, Resident Manager, St. Regis Paper Co., Sartell, Minnesota.

Mrs. William Crampton, League of Women Voters, 606 Peggy Lane, White Bear Lake, Minnesota.

Mrs. Irv Deneen, Minnesota League of Women Voters, 831 West Nebraska, St. Paul, Minnesota, 55117.

T. Robert Edmen, General Manager, Consulting Services Co., IBM Building, St. Paul, Minnesota.

Arvid M. Falk, Assistant City Attorney, City of Minneapolis, 325M City Hall, Minneapolis, Minnesota.

Mrs. Neil Franey, President, WBL League of Women Voters, 1323 Hedmanway, White Bear Lake, Minnesota.

Dennis Gilberts, Steam Plant Sup. Engineer, Northern States Power, 414 Nicollet, Minneapolis, Minnesota.

Robert E. Hansen, Project Consultant, South St. Paul, 211 Grand Avenue, South St. Paul, Minnesota.

LIST OF ATTENDANCE: (CONTINUED):

Fred Heisel, Public Health Engineer, Health Department, Box 675, Fergus Falls, Minnesota.

Jay Herr, Technical Director, St. Regis Paper Co., Sartell, Minnesota.

George R. Irons, Chief Engineer, Swift & Co., Concord & Grand Avenues, South St. Paul, Minnesota.

C. A. Johannes, Public Health Engineer, Minnesota Water Pollution Control Commission, University of Minnesota, Minneapolis, Minnesota.

Robert J. R. Johnson, Reporter, St. Paul Dispatch, 55 E. Fourth St., St. Paul, Minnesota.

Keith Larson, Sewage Treatment Plant Superintendent, City of South St. Paul, South St. Paul, Minnesota.

L. W. Marsh, Executive Secretary, Minneapolis-St. Paul Sanitary District, 2400 Childs Road, St. Paul, Minnesota.

John M. Mason, Dorsey, Owen, et al., 2400 First National Bank Building, Minneapolis, Minnesota.

Douglas A. Maulwurf, Chemist, South St. Paul, South St. Paul, Minnesota.

Arthur Menard, Staff Engineer (Region), Armour & Co., Stockyards Station, South St. Paul, Minnesota.

Kerwin L. Mick, Chief Engineer and Superintendent, Minneapolis-St. Paul Sanitary District, 2400 Childs Road, St. Paul, Minnesota.

LIST OF ATTENDANCE (CONTINUED):

Norman Sefer, Technical Director, Great Northern Oil Co., P. O. Box 3596, St. Paul, Minnesota.

Richard L. Sha, Engineering Consultant, North Suburban Sanitary Sewer District, 1440 Co. Rd. J, Minneapolis, Minnesota.

Robert Sterrett, Engineer Pollution Control, A.D.M., 10701 Lyndale Avenue South, Minneapolis, Minnesota.

W. J. Sutherland, Consulting Engineer, 3919 West 44th Street, Minneapolis, Minnesota.

Walter Thorpe, Engineer, Toltz, King, Duvall, Anderson, 1408 Pioneer Building, St. Paul, Minnesota.

Orbbie K. Webber, Personnel Manager, St. Regis Paper Company, Sartell, Minnesota.

Carson Wu, Research Assistant, University of Minnesota Agricultural Economics Department, St. Paul Campus, St. Paul, Minnesota.

Stanley York, Assemblyman, Wisconsin Boundary Area Commission, Legislative Advisory Committee, 118 North Third St., River Falls, Wisconsin.

* * * * *

PROCEEDINGS

MR. STEIN: May we get started?

The joint State-Federal conference in the matter of pollution of the interstate waters of the Mississippi River in the Twin Cities area is reconvened.

While a few people from Minnesota are not here yet, we have decided to get started in an attempt to finish our business.

At this point I would like the people at the table to introduce themselves.

Would you start at the left hand, please?

DR. ODEGARD: I am Peter Odegard, representing the State of Wisconsin, but also in a sense from the State of Minnesota, since I do work for the Interstate Boundary Area Commission.

MR. DAMON: I am Andrew Damon, with the Department of Resource Development, representing the State of Wisconsin.

MR. WISNIEWSKI: I am Theodore Wisniewski of the Resource Development Department of Wisconsin.

MR. HOLMER: Freeman Holmer, Department of Resource Development, State of Wisconsin.

DR. HARGRAVES: Dr. Hargraves of the Minnesota State Commission.

MR. SMITH: Lyle Smith, Executive Engineer of the Minnesota Water Pollution Control Commission.

MR. POSTON: H. W. Poston of the Federal Water Pollution Control Administration.

MR. STEIN: And my name is Murray Stein from the Department of the Interior in Washington.

Do you want to name your other two people for the record now, so that the record will reflect that, and when they come in we will note them?

DR. HARGRAVES: Well, Mayor Jelatis from Red Wing is also one of the conferees, and I believe the storm has slowed down his progress coming from Red Wing. Chester Wilson, who was formerly with us and has been former Chairma of our Commission, is also one of the conferees, as he was i the previous meeting. He too has to come from Stillwater, a distance of some miles from this room, and he too has been delayed and has called in and will be here.

MR. STEIN: And Mr. Olsen, will you identify yourself?

DR. HARGRAVES: Mr. Olsen has joined us this morning.

MR. OLSEN: I am Raymond T. Olsen, State Planning Director and representing the Governor of Minnesota.

MR. HOLMER: The fifth member of the Wisconsin delegation is Mr. O. J. Muegge, member of the Resource Development Board of the State of Wisconsin.

MR. STEIN: At this point I would like to introduce Senator Gordon Rosenmeier of Minnesota, who, as you all know, has been very interested in water pollution control in the State of Minnesota.

We are very happy to have you with us

Since the last session of the conference, the Technical Committee has met and has come up with a rather imposing set of proposals.

I have not discussed this with the panel and the other conferees, but my suggestion is that we might use this as a text and go down it and see if this can be a basis of agreement.

Is this agreeable?

MR. HOLMER: Do you have other copies of this?

MR. STEIN: Yes.

Before we get started with that, as you know, we also kept the record open for statements which were to appear in the record.

Mr. Smith, do you have any of those that you might want to introduce at this time?

MR. SMITH: Mr. Chairman, I have a number of statements which were received since the session on February

28th and March 1st.

The first one I have is from the City of South St. Paul, dated March 8, 1967

The second one is from the Minneapolis-Saint Paul Sanitary District, supplementary statement to the Federal Water Pollution Control Administration, dated March 6, 196

The next statement is from the City of Minneapolis, headed "Statement for Presentation at Federal and Interstate Conference on Pollution of the Mississippi River at Minneapolis," dated February 28, 1967.

The next is a statement by the Hopkins Democratic-Farmer-Labor Club for the Federal Water Pollution Control Administration Conference in the Matter of Pollution of the Interstate and Intrastate Waters of the Upper Mississippi River and Tributaries, Convened February 28, 1967, Minneapolis, Minnesota.

I also have a statement by the Twin City Pipe Trades Council, Minneapolis-St. Paul. This is for the Conference in the Matter of Pollution of the Interstate and Intrastate Waters of the Upper Mississippi River and Tributaries, Convened February 28, 1967, Minneapolis, Minnesota.

I also have a statement from the Plumbers Union No. 15, Minneapolis, Minnesota, to be presented at the

Conference in the Matter of Pollution of the Interstate and Intrastate Waters of the Upper Mississippi River and Tributaries, Convened February 28, 1967, at Minneapolis, Minnesota.

I also have a statement from Muskies, Inc., dated February 28, 1967.

I also have a statement actually in the form of a memorandum to the Federal Water Pollution Control Administration from K. L. Mick, of the Minneapolis-St. Paul Sanitary District, regarding the July 1966 "Report on Pollution of the Upper Mississippi River and Major Tributaries," Federal Water Pollution Control Administration, dated March 15, 1967.

I also have a statement submitted by the City of St. Paul in a letter of March 15th of the St. Paul Union Stockyards, dated February 28, 1967.

I also have a letter from Swift and Company, South St. Paul, Minnesota, dated March 15, 1967.

The next statement is a supplemental statement of the North Suburban Sanitary Sewer District, dated March 20, 1967.

The last I have is a letter dated March 3, 1967, from Toltz, King, Duvall, Anderson and Associates, Inc.

Mr. Chairman, I would like all of these to be entered into the record.

MR. STEIN: Without objection, this will be done.

(The following are the statements above referred to:

CITY OF SOUTH SAINT PAUL
SOUTH SAINT PAUL, MINNESOTA

Office of
JOHN P. BADALICH
City Engineer and
Superintendent Water Dept.
Tel. 451-1738

March 8, 1967

Mr. Lyle Smith
Executive Engineer
Minnesota Water Pollution Control Commission
Minnesota Department of Health
University Campus
Minneapolis, Minnesota 55440

Re: Conference on Pollution of the
Upper Mississippi River, etc.

Dear Mr. Smith:

I wish to submit the following recommendations and suggestions for your further consideration and that of the conferees on the matter of pollution of the interstate and intrastate waters of the Upper Mississippi River and its tributaries in behalf of the City of South St. Paul. It is my understanding that this writing will be made part of the record of the meeting which was held on February 28, 1967, and March 1, 1967, in Minneapolis, Minnesota.

Referring to the general recommendations of the summary report and to Page 29, Paragraph 3, regarding treatment of municipal wastes, it appears that the requirement of continuous disinfection of the effluent on a year around basis is unreasonable and would place an undue hardship on the City of South St. Paul. We feel that the river classifications and standards set for the Mississippi River by the MWPCC on March 28, 1963, are more than adequate in providing the necessary protection in the river during the summer months or recreational season. It is estimated that the City of South St. Paul would have to spend in excess of $38,000.00 more each year to provide continuous chlorination other than during the 4 month recreational season.

Another item of great concern to the city is the specific recommendation for waste loads to the river, this being the limited amount of 68,500 lbs/day of 5-day (20°c) B.O.D. The major question confronting us at this time is by what method will this fixed amount of 68,500 lbs/day of

B.O.D. be allocated to the City of South St. Paul and the MSSD?

Reference is made to Table V-3 of the detailed report on pollution of the Mississippi River, etc., by the FWPCA whereby it is stated, and as an assumption, the MSSD and SSP would have equal effluent concentrations of B.O.D. and that the ratio of flow rates remain constant. The MSSD would be allotted 63,700 lbs/day of 5-day B.O.D. This would then leave the City of South St. Paul an effluent B.O.D. concentration of 4800 lbs/day, which would then require the City of South St. Paul to remove 96.9 percent of 5-day B.O.D. presently, 97.1 percent of 5-day B.O.D. in 1970, 97.4 percent of B.O.D. in 1980 and 97.7 percent of B.O.D. in 2000 if this method of allocation is used. This method of allocation would be most unreasonable and a practically impossible approach to this problem, as it would require the city to go into sand filtration of our wastes or into some other highly expensive tertiary treatment process. Our present long range plans for upgrading our treatment facilities are geared for a 95 percent removal of 5-day B.O.D. with an effluent of 65 mg/l or less, of 5-day B.O.D.

A more equitable or practical approach to this allocation of the 68,500 lbs/day waste load would be in the area of requiring the City of South St. Paul to increase their percentage of treatment to an amount 50 percent greater than the effluent from the MSSD plant on the remaining percentage of removal up to 95 percent. As an example, if MSSD had an 80 percent B.O.D. removal, SSP would be required to have a 90 percent removal and if MSSD increased to 90 percent removal, SSP would be required to increase to 95 percent removal which in effect would be our maximum requirement.

Another approach to this B.O.D. allocation could be a method based on a population equivalent of the influent entering the respective plants. I am sure MSSD would not sit still for this method of allocation.

In any event, we feel that this strict application of a maximum amount of 5-day B.O.D. loading to the river is unreasonable and unrealistic based on an assumed low flow of 1900-1950 cfs in the Mississippi River. To spend millions of dollars in capital costs and additional operating and maintenance costs to satisfy a theoretical river condition based on an arbitrary low flow that occurred a few consecutive days in the past 25 years, is an unreasonable demand to place on the taxpayers of the State. During the minute period that this low flow or critical river condition exists, the city's municipal sewage treatment facilities could employ one of many supplementary methods of treatment, such as chemical chlorination and aeration of the effluent rather than building expensive unneeded extra capacity in the treatment works.

We certainly feel that the desired oxygen level of 3.0 mg/l can be maintained as a minimum in the river at all times under the standards set for the Mississippi River from the MSSD plant to Lock & Dam No. 2 by the MWPCC.

One further point that should be mentioned is the time schedule set forth in the summary report, which states that all construction shall be completed and plants placed into operation within 36 months. Not that we intend to drag our feet, but due to our limited construction season and the need for evaluating operating data after completion of certain improvements, the 36 month time period will fall short by approximately 12 months.

As an example, our proposed schedule of stage improvements at our municipal sewage treatment plant calls for immediate construction of an additional interceptor sewer and other first stage improvements costing in excess of 2.5 million dollars. This work should be completed and placed into operation by February of 1968. Following this construction, a period of one year will be necessary to evaluate the results of these improvements and at the same time we would be evaluating the use of chemical flocculants or polymers to determine to what extent further secondary treatment would be required, either by high rate trickling filters, anaerobic digestion, chemical flocculation or some other economical method. Following this evaluation a 6 to 9 month period is necessary to prepare plans and specifications for bidding. Following receipt of bids a 12 to 18 month period of construction would be required for the building of these additional secondary treatment units. Totaling up this schedule of plans, specifications, evaluation and construction would indicate a practical minimum of 48 months.

Again I wish to thank you, Mr. Murray Stein and the conferees from Minnesota and Wisconsin for the opportunity afforded the City of South St. Paul in stating both verbally and by letter, our position and progress regarding the matter of water pollution in the Mississippi River.

Sincerely yours,
(Signed) John P. Badalich
John P. Badalich, P. E.
City Engineer

* * * * *

MINNEAPOLIS-SAINT PAUL SANITARY DISTRICT

SUPPLEMENTARY STATEMENT

TO THE

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION

U. S. DEPARTMENT OF INTERIOR

MARCH 6, 1967

A statement was submitted at the Federal Water Pollution Control Administration Conference of February 28th and March 1st which outlined the accomplishments of the Minneapolis-Saint Paul Sanitary District toward pollution abatement and cited certain objections which the District has to the recommendations of the FWPCA report.

While the District has registered objection to several areas of the FWPCA report in its statement of February 27th, there are two of the report's recommendations which the District firmly opposes. These are the following:

1. The limitation of the combined waste load of the effluents of the District and South Saint Paul treatment plants to 68,500 pounds per day of 5 day BOD and 85,500 pounds per day of suspended solids on a year around basis.
2. Chlorination at the heavy dosage required to maintain coliform Guide B level on a year

around basis.

EFFECT ON THE DEGREE OF TREATMENT

This limitation on the effluent load at the District's treatment plant has the effect of imposing a higher degree of treatment in the Hastings pool than in other upriver reaches of the Mississippi River. The treatment required at the District plant would exceed by a substantial measure the minimum uniform level of 80 percent BOD and suspended solids removal recommended for all waste treatment facilities. Instead of the 80 percent efficiency permitted at other plants (including upriver), the restriction on the effluent load would require at the District a BOD removal of 90 percent in 1980 and 94 percent in the year 2000. The Hastings pool which is downstream from the centers of population and flowing through an industrialized area should be subject to less restrictive water quality criteria and lower treatment requirements as compared to other sections.

This requirement of a very high level of treatment on a year around basis is not only unjustified from the standpoint of economy, but also would be virtually impossible to comply with under all river flow conditions.

The effluent load limitation should be applied to low river flow periods only, not to the entire year.

TREATMENT ALTERNATIVES

The arbitrary establishment of a maximum effluent load as recommended by the FWPCA report precludes employment of treatment procedures which are particularly well suited to the wide seasonal variation in the assimilative capacity of the Mississippi River. More consistent with the environmental and climatic conditions of this area would be the employment of a continuous base level of secondary treatment in the order of 75 percent removal, with higher levels of treatment accomplished on a modulating basis to conform to the established river water quality standards.

The District proposes the employment of auxiliary methods which are available to augment dissolved oxygen resources. In addition to "in-plant" effluent aeration and chlorination for BOD removal and retardation, the river's resources can be augmented by river aeration at hydro-plants, mechanical or diffused aeration, aeration at dams, and by low flow augmentation. Many of these methods can accomplish the same objective -- maintaining minimum dissolved oxygen levels at the critical point -- much more economically than the seemingly simple expedient of requiring a higher degree of treatment.

ADDITIONAL COSTS

Maintenance of the water quality of the river in the Hastings pool to the relatively high levels recommended in the FWPCA report will require another expansion of the main treatment plant in addition to the $27.0 million project which is nearing completion.

A preliminary investigation indicates that to meet this effluent quality on a continuous basis will necessitate the employment of the Step Aeration Process. An additional expenditure of approximately $10.0 million will be required for the first phase of these treatment and sludge disposal works, based upon a design period and loading which corresponds with the plant expansion presently underway. In addition to the large capital cost involved, higher operating costs will be incurred to the extent of $300,000 per year. As the plant is expanded in future years, each increment will cost proportionally more per unit of capacity to provide for the higher level of treatment.

It is imperative that every dollar spent on new treatment works or on plant operation results in some "real" benefit in terms of the enhancement of the quality and value of the water resource which is in the public interest. The District urges a reasonable and realistic balance between the cost of treatment and the results of treatment.

CONFLICT WITH COMPREHENSIVE SEWAGE WORKS PLAN

Based upon the conclusions of extensive studies and investigations, the Board of Trustees of the District and the District's engineers have consistently held to the judgment that the best solution to the water pollution problems of the metropolitan area involves the collection and treatment of sewage at one or more plants downriver of the centers of population. Application of the effluent load limitation shifts several factors to favor upriver treatment plants, to the detriment of water quality in sections of river through highly populated areas. The District cannot support these recommendations which are in conflict with the Comprehensive Sewage Works Plan.

CHLORINATION OF EFFLUENT

Chlorination on a year around basis as included in the report recommendations is not consistent with the stated river water uses of limited body contact recreational activities and commercial shipping. Both of these activities are limited by the climate and the resulting ice cover to no more than one-half of the year. Chlorination at the heavy dosage required to maintain the coliform Guide B level during winter months causes a substantial expenditure toward pollution abatement without accomplishment of any real benefit.

The cost of effluent disinfection is nearly proportional to the duration of its employment. Our estimate is that the continuous chlorination cost will be approximately $360,000 per year while the cost of four months of chlorination will be approximately $150,000. It is the Minneapolis-Saint Paul Sanitary District's position that the expenditure for chlorination outside of the recreational season is not justified in terms of the benefits to downriver users. Chlorination of the plant effluent to these low levels of coliform would be negated by overflows from the combined sewer system at times of heavy rainfall. Even with complete separation of the sewers, there will be heavy coliform contaminations from the runoff discharged from the storm sewers.

CONCLUDING STATEMENT

The Sanitary District urges the deletion from the specific recommendations of the restrictive and arbitrary limitation of the effluent waste loads of the District and South Saint Paul treatment plants to 68,500 pounds per day of 5 day BOD and 85,500 pounds per day of suspended solids on a year around basis. Further, the District proposes the modification of the year around effluent disinfection recommendations to conform to the realistic water uses.

Based upon the accomplishments of the Minneapolis-Saint Paul Sanitary District and in recognition of the status of its plant expansion program, the District requests a modification to the Schedule of Remedial Program to permit a full evaluation of the effect of new plant on the Mississippi River before proceeding further with any additional improvements.

* * * * *

CITY OF MINNEAPOLIS
Statement for Presentation at
Federal and Interstate Conference
on Pollution of the Mississippi
River at Minneapolis
February 28, 1967

The Public Works Department of the City of Minneapolis is responding to the invitation of the Water Pollution Control Commission with respect to the policy of the City of Minneapolis concerning the problem of pollution with reference to the Mississippi River as it involves the city.

As the largest city on the Upper Mississippi River Watershed, the City of Minneapolis has long recognized and exercised its responsibility in the control and abatement of water pollution and the protection of the metropolitan area's water resources.

In 1933, as the culmination of an extensive investigation of the pollution of the Mississippi River, the City of Minneapolis joined with the City of Saint Paul as the major participants in the Minneapolis-Saint Paul Sanitary District. The accomplishments of the Sanitary District include the engineering and construction of a major system of interceptor sewers and treatment works which set the pattern of downstream pollution abatement and waste treatment practices. Beginning operation in 1938, the Sanitary District's primary sewage treatment plant has established an outstanding record of successful and efficient operation, effecting a significant improvement in the past downstream river conditions and maintaining reasonable levels of water quality.

In response to the surge of growth and development experienced in the Minneapolis-Saint Paul Metropolitan Area in the early 1950's, the Minneapolis-Saint Paul Sanitary District in 1956 embarked upon a costly and extensive study of the sewage works requirements of the metropolitan area. With the preliminary investigation essentially completed in June 1961, the District authorized a major expansion program to the existing Pig's Eye Lake Sewage Treatment Plant. This treatment plant expansion project, which has a total estimated cost of $25,750,000, is now approaching completion of construction. It includes additional capacity for the growth and development of the two Central Cities as well as the contracted suburban communities which comprise a sewered area nearly double that of Minneapolis-Saint Paul proper. In addition, the new expanded treatment plant includes secondary treatment which will accomplish levels of treatment substantially higher than that presently attained.

Supplementing the program of the Sanitary District, the City of Minneapolis has instituted independent programs which have benefited long range water pollution control objectives. The city's program of replacing the original combined sewer system with separate storm and sanitary sewers has substantially reduced overflow of untreated sewage to the river during times of rainfall and runoff. Over the years, approximately $22,000,000 has been expended on this storm water separation program. An accelerated program has been scheduled for the future years and these projects are being constructed as rapidly as financial resources permit.

The September 1960 report of the engineering consultants to the Sanitary District (Volume Three, Page 12-4) shows that of the 27,710 acres of sewered area in the City of Minneapolis, 15,847 acres (or over 57 percent) was served by separate sanitary and storm sewers.. Work completed since this report was made, together with projects now being built, will add approximately 4,000 acres served by separate sewers, increasing to over 70 percent the total area having completely separated sewers. The conversion of substantial areas of Minneapolis from a combined system to separate sewers for storm water and sanitary sewerage has made it possible for Minneapolis to convey through its system of trunk sewers and interceptors the sanitary sewage from surrounding suburban communities. At the present time there are twenty-seven suburbs and agencies that use or have made arrangements to use the Minneapolis sewer system.

In the spring of 1962 the State of Minnesota, through its Water Pollution Control Commission and State Board of Health, held formal hearings proposing "classification of the Mississippi River and its tributaries between the Rum River and the St. Croix River and for the establishment of Pollution Standards therefor." The City Council authorized introduction of a statement favoring the proposed classification. Standards proposed for the section between the Rum River and St. Anthony Falls are essential to protect the water supply of Minneapolis, St. Paul and the suburban areas presently being served by the Minneapolis and Saint Paul water plants. The standards proposed for the section between St. Anthony Falls and the Minneapolis-Saint Paul Sanitary District plant "will when adopted and enforced be of great benefit to the residents of the Metropolitan Area." This stand by the City of Minneapolis in favor of the classification and regulation of these two sections of the Mississippi River was taken with full knowledge and understanding of the obligations it was assuming.

In summary, the City of Minneapolis believes that its record of past accomplishments, its policy of continuing as rapidly as possible its storm sewer program, its cooperation with the State Legislature, the State Board of Health, and the Water Pollution Control Commission and suburban communities is a commendable one and indicates clearly its determination to improve the quality of the water in the river.

CITY OF MINNEAPOLIS

By (Signed) Thomas A. Thompson
Thomas A. Thompson,
Director of Public Works

By (Signed) Keith M. Stidd,
Keith M. Stidd,
City Attorney

* * * * *

STATEMENT BY HOPKINS DEMOCRACTIC-FARMER-LABOR CLUB

FOR: Federal Water Pollution Control Administration Conference in the Matter of Pollution of the Interstate and Intrastate Waters of the Upper Mississippi River and Tributaries. Convened February 28, 1967, Minneapolis, Minnesota

The Hopkins, Minnesota, Democratic-Farmer-Labor Club appreciates the opportunity to express its satisfaction with the Upper Mississippi River Project Study Summary and Pollution Abatement Recommendations.

We are gravely concerned with the serious degradation of the waters represented by the Project Study, and we support the efforts being made by the Federal Water Pollution Control Administration to lead the way to clean, healthy, and enjoyable water resources.

In order to increase the effectiveness of the Recommendations, we respectfully request the following modifications to be included:

A. Cooling facilities of adequate capacity to lower high-temperature discharges to levels compatible with maintenance of aquatic life

B. All waters to be monitored for the pesticide levels existing, as a protection to the public health.

C. Establishment of a radioactive level monitoring program and prohibition of radioactive waste discharge to these rivers.

C. Inclusion of the following sections of rivers as a Group I fish habitat:

1) Minnesota River from Chaska to confluence of the Mississippi River.

2) Mississippi River from Minneapolis-St. Paul Sanitary District outfall to Lock and Dam Number 2.

In their deliberations following the Conference, the Conferees are respectfully requested to adopt the Recommendations, with the preceding modifications.

(Signed) Paul W. Lohmann, Chairman
Paul W. Lohmann, Chairman
Hopkins, Minnesota, DFL Club

* * * * *

STATEMENT BY TWIN CITY PIPE TRADES COUNCIL (Minneapolis-St.Paul)

For the Conference in the Matter of Pollution of the Interstate and Intrastate Waters of the Upper Mississippi River and Tributaries (Minnesota - Wisconsin). Convened February 28, 1967, Minneapolis, Minnesota.

The Twin City Pipe Trades Council (Minneapolis - St. Paul) is appreciative of an opportunity to present its views on the Summary and Pollution Abatement Recommendations for the Upper Mississippi River and major tributaries.

The more than three thousand members of the Twin City Pipe Trades Council, and their families, are directly concerned with the efforts to clean up the three river basins involved in the Summary and Pollution Abatement

Recommendations. As residents of the project study area, and users of the area water resources, we wish to commend the persons responsible for the generally high quality of the Recommendations and the Remedial Program.

We urge adoption of the Recommendations by the Conferees, with the addition of the following modifications:

A. In view of the great recreational advantages of the river basins of the project study area and as a preparation for the predicted doubling of the area population by the year 2,000, we respectfully request the Conferees to upgrade the following sections of the project study rivers:

1) Minnesota River: Mankato to confluence of the Mississippi River to be included as a whole body contact recreational activity area.

2) Minnesota River: Chaska to confluence of the Mississippi River to be included as a habitat for Group I fish.

3) Mississippi River: Minneapolis - St. Paul Sanitary District to Lock and Dam Number 2 to be included as a habitat for Group I fish.

4) Mississippi River: Minnesota River junction

to Lock and Dam Number 2 to be included as a whole body contact recreational activity area.

B. In order to make effective inroads into the present high fertilization rates of the project study rivers, we urge the Conferees to include high-efficiency phosphate and nitrate removal treatment requirements for wastes discharged to these water courses.

C. We request the inclusion by the Conferees of a first-quality mandatory training and certification program for sewage treatment plant personnel operating the plants discharging wastes to the project study waters.

D. As a public health and welfare protection, we respectfully request the establishment of a pesticide monitoring program in all waters included in the Recommendations.

E. In order to enhance the receiving waters for fish and to protect the public health of the area residents, we request the inclusion of cooling water discharge facilities of sufficient capacity to lower the temperatures to 83 degrees Fahrenheit at point of discharge.

During their deliberations following the Conference, the honorable Conferees are respectfully requested to adopt the Project Study Recommendations, subject to the modifications enumerated above, in order that the residents of the area may enjoy the unique recreational and aesthetic characteristics of these three river basins.

(Signed) George C. Moore

George C. Moore, President

Twin City Pipe Trades Council

February 27, 1967

* * * * *

PLUMBERS UNION NO. 15 - 708 South Tenth Street
Minneapolis, Minnesota

To be presented at the Conference in the Matter of Pollution of the Interstate and Intrastate Waters of the Upper Mississippi River and Tributaries (Minneapolis - Wisconsin). Convened February 28, 1967, in Minneapolis, Minnesota.

Plumber's Local Union No. 15, Minneapolis, Minnesota, appreciates the opportunity to review the Summary and Pollution Abatement Recommendations for the Upper Mississippi River and major tributaries. We also appreciate the opportunity to make our views known to the distinguished Conferees in the matter of enhancement of the rivers included in the project study.

We wish to commend the study group for their objective analysis of these rivers, and for their evident desire to delineate the serious problems to be corrected before these unique rivers are lost for the full enjoyment and benefit of the residents in this and surrounding areas.

The more than one thousand members of Plumber's Local Union No. 15 and their families are interested in promoting the general health and welfare of all citizens. We are concerned about the evident and unnecessary degradation of our environment and consequently wish to urge adoption by the Conferees of the following modifications to the Recommendations:

I In order to halt the serious degradation of the project study waters by present, as well as future thermal pollution sources, we respectfully request the inclusion of cooling water facilities of sufficient capacity to maintain discharge condenser wastes at 81 degrees or less at all times.

II Because of the severe genetic and carcinogenic effects of radioactive pollution for which science has found no known levels, we urgently request the total prohibition of the disposal of all radioactive wastes in the three rivers included in the project study.

III In keeping with the preceding recommendation for protection of the public health, we strongly urge the adoption of a background radiation monitoring program as a protection against the potential hazards of radioactive pollution by nuclear fueled power generating facilities.

IV We request the Conferees to include a high quality, effective mandatory training and certification plan under the surveillance of the Minnesota State Board of Health for all sewage treatment plant operators employed in facilities discharging effluents to the project study rivers.

V In order to check the excess fertilization of the study rivers, we respectfully request the inclusion of high-efficiency phosphate and nitrate removal treatment requirements for all phosphate and nitrate-containing waters discharged to the project study rivers.

VI In view of the substantial recreational potential and the anticipated population growth in the study area, combined with the proximity to a major metropolitan population center, we urge the Conferees to enhance the project study rivers in three sections:

a) Minnesota River: Chaska to confluence of the Mississippi River to be included as a habitat for Group I fish.

b) Minnesota River: Mankato to confluence of the Mississippi River to be designated as a whole body contact recreational activity area.

c) Mississippi River: Minneapolis-St. Paul Sanitary District to Lock and Dam 2 to be designated a habitat for Group I fish.

c) Mississippi River: Minnesota River to Lock and Dam 2 to be designated a whole body contact recreational activity area.

In their deliberations following the Conference, the Conferees are respectfully requested to include the above recommendations in order that the citizens of the area may fully enjoy the benefits of these three river basins for refreshment from the stresses of urban living.

(Signed) Reuben S. Porter

R. S. Porter, President.

* * * * *

MUSKIES, INC.
1708 University Ave.
St. Paul, Minnesota

February 28, 1967

Muskies, Incorporated, is a recently founded non-profit organization devoted to the improvement of Minnesota's sport fishery. We have at present more than 50 members.

Our members wish to go on record as being in support of standards for the Mississippi River from Anoka to Lake Pepin which would be adequate for high quality game fish such as the Muskellunge. This means that an effective program of pollution abatement must be instituted which would reverse the abysmal degradation of this great river. The recently proposed Federal standards represent a movement towards achievement of this goal.

As a separate but equally important issue we wish to emphasize that there should be no further degradation of Lake St. Croix from its present high quality. This is presently excellent water for game fish. The standards for the St. Croix must include prevention of thermal pollution.

(Signed) Arnold W. Lindall

Arnold W. Lindall, M. D., Ph.D.
Board of Directors
Muskies, Inc.

* * * * *

Memo to: Federal Water Pollution Control Administration

From: K. L. Mick, Minneapolis-Saint Paul Sanitary District

Re: July 1966 "Report on Pollution of the Upper Mississippi River and Major Tributaries" - FWPCA

Date: March 15, 1967

The recent availability of the above-titled report, permits us to make certain additional comments to supplement our February 27, 1967, and March 6, 1967, statements. The three points we would like to emphasize and reiterate in this memorandum relate to (1) the coliform levels, (2) the minimum dissolved oxygen level, and (3) the maximum phenol concentration, in the section of the Mississippi River from the outfall of the Minneapolis-Saint Paul Sanitary District sewage treatment plant to Lock and Dam No. 2 near Hastings.

(1) Coliform Levels. The requirement of a maximum coliform count in any one sample of the plant effluent of 5,000 per 100 ml. is unreasonable and arbitrary in view of the practicalities of the situation and the likely potential use of this river stretch. The February 27 statement points out the negating effect of combined sewer overflows and even of discharges of storm

water from a completely separated sewer system on bacteriological quality.

The above requirement is even more rigid than that recommended for a municipal water source. The report states on Page VI-10 that as a source of municipal water, the "water may be considered acceptable if the coliform concentration (at the intake) averages not more than 4,000/100 ml." The section of the Mississippi River from Anoka to St. Anthony Falls is stated in the report (Page V-59) to be "suitable for all uses considered in this report." But even in this stretch the coliform indices frequently exceed 5,000 per 100 ml, as shown by the fact that of 261 samples collected in the eleven year period (1955-65) from Stations near the intake to the Fridley water plant and analyzed by MSSD, 54 or approximately 20 percent had coliform counts greater than 5,000 per 100 ml and several were greater than 50,000. Acceptable bacteriological standards for raw waters allow for such a variance.

The point we are making is, that if a maximum limit is to be set, either of the river or of the effluent (and preferably the former), it should not be based on a single sample (grab or composite), but rather on an average or on a geometric mean density in a stated time interval such as one month and even then some variation for stated percentages of samples should be permitted. Otherwise the best designed and operated plants would be in technical violation on the first day a sample showed a count greater than 5,000 per 100 ml. This is a distinct likelihood when consideration is given to the fact that with raw sewage coliform concentrations of 100,000,000 per 100 ml or greater, a continuous and never failing overall destruction of 99.995 percent would be required. The likelihood is further increased when it is realized that equipment fails, people fail, and power fails, even though the frequency and duration is low under the best controlled situations.

(2) Minimum Dissolved Oxygen Level. The report recommends the maintenance of a minimum of 3.0 mg/l of D.O. during flows equal to or greater than the 7-consecutive-day, once in 10-year summer and winter low flows. As presented in

the February 27 statement, the District endorses the prevailing standards adopted by the Minnesota Water Pollution Control Commission in March 1963 in this regard, and opposes the more restrictive FWPCA recommendations.

In addition to this objection, however, the District cannot agree with the rigidity of the proposed level. Here again the requirement is based on a minimum concentration for any one sample. It is generally recognized that oxygen levels in a river vary with horizontal and vertical location of the sampling point, and with the time of the day as affecting solar radiation and photo-synthetic action. At a given horizontal location, D.O. samples can vary from zero percent saturation to super-saturation depending on distance from the shore, depth, time of the day, and other factors. The sampling conditions and what constitutes a single sample must be stated. It is our additional recommendation that if the 3.0 mg/l limit is allowed to stand, it permit some variance, such as allowing lesser concentrations for a stated number of hours per day somewhat as suggested by Aquatic Life Advisory Committee of ORSANCO in its September 1, 1954, report.

(3) Maximum Phenol Concentration. The report recommends a maximum concentration of 0.01 mg/l at the 7-consecutive day, once in 10-year low winter flow. This will require a removal of about 90 percent of this pollutant. The March 1963 Standards of the MWPCC permitted a maximum of 0.10 mg/l in this stretch. This ten-fold decrease in permissible levels, without allowing any variance for influencing factors, will require additional treatment facilities beyond those now in progress.

SUMMARY. The District recommends, if the requirements are to remain at the present levels, that their severity and rigidity be altered by permitting variance for stated percentages of samples to stated upper or lower limits. Otherwise the standards would be impractical to comply with and therefore unreasonable.

The District continues to feel after reviewing the report of the FWPCA that the existing use classifications and standards for this river section, adopted by the Minnesota Water Pollution Control Commission on March 28, 1963, are as stated in our February 27, 1967, statement, "reasonable, adequate, and consistent with present and possible future downstream water uses."

* * * * *

SAINT PAUL UNION STOCKYARDS
Division of United Stockyards Corp.
South St. Paul, Minn. 55076

STATEMENT OF SAINT PAUL UNION STOCKYARDS

This statement is submitted on behalf of the Saint Paul Union Stockyards to the Conference in the matter of pollution of the interstate and intrastate waters of the Upper Mississippi River and its tributaries, held February 28, 1967

At the outset it should be noted that we have actively cooperated since 1940 with the City of South St. Paul in the treatment of waste water. The significant sources of degrading waste water do now and have regularly been channeled to the interceptor sewer of the City for eventual treatment at the waste water treatment plant of the City of South St. Paul.

Specifically, it should be noted that our controls have never permitted truck washing wastes to be discharged to the Mississippi River as a regular practice. Since October 3, 1966 there have not been any truck washing waste waters entering our sewer system.

Presently the interceptor sewer is surcharged so that it will not accommodate additional flows at certain times. This will be remedied when the construction of the supplemental interceptor by the City is completed. It is anticipated that this will eliminate the existing surcharging conditions, as well as receive the low strength flow presently being discharged directly into the Mississippi River.

We are in the process of having installed a water programming system whereby the flow and use of water can be effectively controlled.

We have and will continue to cooperate in the eventual elimination of unreasonable water pollution.

February 28, 1967

Swift & Company

Union Stock Yards South St. Paul, Minnesota

March 15, 1967

Mr. John Badalich
City Engineer
City of South St. Paul
South St. Paul, Minnesota

Dear Mr. Badalich:

In reference to your request of February 23:

Prior to January, 1965, and specifically before the Bannister report, only minor emphasis was given generally to water conservation and reduction of effluent and strength. Conversely much action has generated since that time. Our three quarterly reports to you beginning in March, 1966 indicated--

	Gals per day	Gals per year
Water savings	271,154	64,460,000
Sewage savings	385,154	99,600,000

In January and February 1967 further improvements amounted to:

Water savings	11,400	2,740,000
Sewage savings	17,600	4,230,000

Our savings in 1965 were only modest by rerouting lines and tightening up the use of water. Accurate records were kept only for the final three months, October, November, December 1965. Those savings projected to an annual figure of 12,257,000 gallons annually.

Accordingly, our recap October 1965 to date accrues to an annual sewage savings of 116,087,000 gallons, or about 2,232,000 gallons weekly.

In addition to the foregoing, we have three major in-plant improvements in progress:

1. Experimentation with the use of citric acid in the Jet Blood Dryer to further reduce the congealing of blood on equipment and in lines which now finds its way into sewers during cleanup.
2. Parts have begun to arrive for Pacific Separators, which operation will recover grease and solids from our effluent. Target date is 7/1/67.
3. Construction underway and contract being negotiated for the removal of Beef paunch contents from processing which will eliminate fibers, solids and protein that will reduce the B.O.D. strength considerably.

Yours very truly,
SWIFT & COMPANY
/s/
H. F. Morris
General Manager

HFM:bb

* * * * * * * *

SUPPLEMENTAL STATEMENT OF THE
NORTH SUBURBAN SANITARY SEWER DISTRICT

March 20, 1967

This statement is offered for two purposes.

It will be recalled at the outset that at the March 1, 1967 session of the Conference, the North Suburban Sanitary Sewer District requested an opportunity to submit a detailed report of its activities directed toward improvement of the state water pollution control program. Part I of this statement deals with that subject.

In addition, Mr. Stein requested that the District clarify its position relative to the boundaries of the zones suggested for "whole body contact" recreation. Part II of this statement is directed to that question.

PART I

Chester Wilson, Esq., as spokesman for the State Water Pollution Control Commission, made an unwarranted attack on the North Suburban Sanitary Sewer District, in the course of the Conference, characterizing the District as an "enemy of water pollution control". This is the same person who has constantly defended the operation of the Pig's Eye plant by the Minneapolis-St. Paul Sanitary District and urged the expansion of that District to embrace all drainage areas in the vicinity of the Twin Cities, throughout his tenure as spokesman for the commission.

The North Suburban Sanitary Sewer District has, since its creations, been critical of the minimum effort of the Minneapolis-St. Paul Sanitary District in controlling pollution of the segment of the Mississippi River affected by its sewage treatment plant effluent and its bypassed wastes. This criticism has been offered with full knowledge of Mr. Wilson's role as one of the most influential leaders in the state's water pollution control program.

Although the North Suburban Sanitary Sewer District has supported every principle of sound water pollution control and thus respects Mr. Wilson's support of those principles, the District has continued to disagree with the results of the ineffective methods by which those principles have been pursued by the Minnesota Water Pollution Control Commission.

The North Suburban Sanitary Sewer District (NSSSD) was formed on October 23, 1961, pursuant to a special law passed by the Minnesota Legislature at its 1961

Extra Session. It is the outgrowth of the North Suburban Sewerage Committee (NSSC), which was a voluntary organization of the same municipalities which ultimately comprised the NSSSD.

The records show that the first post-World War II efforts of the Minnesota Water Pollution Control Commission (WPCC) to develop any kind of a program for control of water pollution in the Twin Cities metropolitan area were precipitated by the North Suburban Sewerage Committee. On June 8, 1960 the NSSC sent a letter to the WPCC raising questions relative to the quality of the Mississippi River and the objectives sought by the Commission. The response to that letter was a hearing called jointly by the State Board of Health and the WPCC "for the purpose of receiving information bearing upon the condition of the (Mississippi) river, sources of pollution, and existing and potential uses of the river, with particular reference to the inquiry of the North Suburban Sewerage Committee concerning the discharge of treated sewage effluent to the river in the vicinity of 42nd Avenue North (Camden Bridge) in Minneapolis." (Chairman's Report of Hearing, 1960 Concurrent Hearing of Minnesota Water Pollution Control Commission and State Board of Health, October 20, 1960, p. 1).

It can be seen, then, that even from the earliest beginnings of the NSSSD it has been more of a "burr under the saddle" of the WPCC than a "thorn in its side".

Of significance also is the fact that as early as July 1960 (Preliminary Engineering Study, Progress Report No. 1, July, 1960, pp. 3 and 4) the North Suburban Sewerage Committee proposed design of its collection system based upon the ultimate development of the entire area draining to the Mississippi between Anoka and the Minneapolis water intake (the "Northwest Region"), thus precluding any future discharge of sewage effluent into this stretch of the Mississippi River.

The Commission, on the other hand, actively supported an engineering plan during this era involving interceptors to Pig's Eye and expansion of that plant which would have provided for less than one-half of the capacity required for this same area. This appears clearly from the following history: In 1960 the Minneapolis-St. Paul Sanitary District (MSSD) issued a report which contained a recommendation regarding service of the "Northwest Region". (Volume III, Report on Expansion of Sewage Works in Minneapolis-St. Paul Metropolitan Area, Minneapolis-St. Paul Sanitary District, September 1960) The WPCC actively supported this recommendation in 1961, yet in 1964 the engineering data on which this recommendation was based were drastically revised. (Report on Comprehensive Sewage Works Plan for Minneapolis-St. Paul Metropolitan Area, May 1964.) The following tabulation of factors influencing sanitary sewer design compares the 1960 and the 1964 reports. The figures illustrate the gross miscalculation made in 1960.

	1960 Report	1964 Report	Percent Increase
Estimated total Service Area (acres)	146,573	147,170	0.4
Estimated Total Population (Year 2000) Northwest Region	467,500	702,000	50.2
Estimated Sewered Population (Year 2000) Northwest Region	424,000	700,000	65.1
Estimated Sewered Area (Year 2000) Northwest Region	66,485	97,245	46.3
Estimated Sewage Flow (Year 2000) MGD Annual Ave. Basis	45.1	94.37	109.2
Population Density Per Sewered Acre (Year 2000)	7.03	7.22	2.7

As can be seen by the above tabulation, the estimated sewage flow in the 1964 report (and thus the estimated interceptor sewer size) was more than double the estimate made by the same persons in 1960. The engineering plan espoused by the WPCC in 1961, based on uncritical acceptance of the 1960 report, required all sewage to be treated at the MSSD Pig's Eye plant and the building of massive interceptor sewers to transport the sewage to that plant. If that plan had been effectuated, the interceptor sewers would have been capable of transporting only one-half of the anticipated sewage flow and, before the year 2,000, a duplication of the nearly thirty miles of interceptor sewers would have been required.

It was the study by the North Suburban Sanitary Sewer District and the NSSSD criticism of the original engineering proposal that caused a revision of the proposal that appeared as the 1964 report. Thus, the North Suburban Sanitary Sewer District averted a multimillion dollar error which the WPCC would have committed for the sake of pursuing its experiment in governmental organization.

The most distressing example of the Water Pollution Control Commission's willingness to abandon accepted water pollution control principle in order to pursue its goal of a single agency metropolitan sanitary district will be found on Page 3 of a letter dated August 2, 1961, over the signature of Dr. R. N. Barr as Secretary and Executive Officer of the State Board of Health and as Secretary of the

State Water Pollution Control Commission. The letter was addressed to both the Minneapolis City Council and the St. Paul City Council. As one of the alternatives for resolving the North Suburban Sanitary Sewer District's problem, Dr. Barr suggested: "Permit the northern suburbs to discharge untreated sewage into the Mississippi River, probably below the St. Anthony Falls Dam, with a definite time limitation and with a specific requirement that such discharge be discontinued at the earliest possible time that a connection to a metropolitan system became available. Although this would re-pollute the section of the river below the outlet for a period of years, it would be preferable, on a long-range basis, to permitting the installation of the proposed plant above Minneapolis. It would also commit the northern suburbs and the Twin Cities to a metropolitan solution to the overall problem."

The NSSSD has always supported high water quality standards and it has always supported the principle that the adoption and enforcement of such standards should be the fundamental function of the State water pollution control agency. This District rejects the idea, however, that a State water pollution control agency can or should use differing or preferential water quality standards to control costs of sewage collection and treatment, for the purpose of making it possible for the agency to dictate: (1) a specific engineering plan; (2) a specific governmental structure; (3) the employment of a specific administrative staff; and (4) the employment of specific engineering consultants, all under the guise of performing its fundamental function of adopting and enforcing water quality standards.

In pursuit of its rejection of such dictation, the NSSSD has constantly criticized the WPCC, in public meetings and before legislative committee hearings, for the incredibly low standards it has adopted for the portion of the Mississippi River affected by the discharges (both bypassed and treated) from the Minneapolis-St. Paul Sanitary District plant, and affected by the overflow discharges from combined storm and sanitary sewers of the Twin Cities. The North Suburban Sanitary Sewer District's observations have since been corroborated by the Federal Water Pollution Control Administration.

The NSSSD has been critical of the WPCC too for its detached attitude toward the inadequate flood protection available at the Minneapolis-St. Paul Sanitary District plant. Whenever the level of the Mississippi River is higher than the elevation of the lowest part of the Pig's Eye plant (even if dikes prevent inundation of the plant) river water backs up into the plant and forces it to shut down. Raw sewage is then bypassed directly into the river. In the spring of 1965 the Pig's Eye plant was required to shut down for roughly six weeks. Dikes had been erected prior to 1965, but they were not high enough to prevent the river from overflowing into the plant. The dikes have since been raised to prevent the river from overflowing, but the NSSSD is unaware of any plans or studies by the MSSD to provide any method of keeping the plant in operation when its outfall line permits river water to back up into the plant.

The WPCC has not required any efforts by the MSSD to alleviate this flood control problem, yet it supports the requirement that all sewage in the entire metropolitan area be treated at the Pig's Eye plant. This is done despite the constant problem at Pig's Eye, and despite the fact that the treatment plant advocated by the NSSSD would be located in an area that is absolutely safe from any flooding danger.

There can be little question that having more than one sanitary district yields benefits. The example of the NSSSD illustrates this fact. The North Suburban Sanitary Sewer District has been in a position to offer enlightened criticism of the area's major pollutor and its control agency, and has been instrumental in precipitating whatever progress has been made since World War II in controlling water pollution in this metropolitan area. The most effective tool in the control of water pollution is the pressure of public opinion. Prior to the creation of the North Suburban Sanitary Sewer District the loudest voice expressing opinion was that supporting the interests of the State's greatest water pollutor, the Minneapolis-St. Paul Sanitary District.

Even though the North Suburban Sanitary Sewer District has precipitated a new pressure of public opinion supporting the interests which have been harmed by pollution, a position that should be supported by any enlightened and objective water pollution control agency, the Minnesota Water Pollution Control Commission has committed all of its resources to increase the voice of the pollutor and to destroy the voice that has supported interests that by all logic would ordinarily be those of the Commission.

The WPCC supports the creation of a new agency, with the Minneapolis-St. Paul Sanitary District as a nucleus, and the present Pig's Eye plant as a basis. This new pollutor would dispose of the sewage of the majority of the population of the State of Minnesota. The Commission that would prefer to make its task or the task of its probable successor impossible is the same Commission that has, by administrative action, declared that the Hastings Pool may be a cesspool and thus has brought about these proceedings.

This is the same Commission that saw the dissolved oxygen content in the Hastings Pool completely exhausted on 10 days in 1961 without requiring the Minneapolis-St. Paul Sanitary District to utilize chemical treatment facilities that should be available for such occasions.

This is the same commission that required out-State municipalities to make treatment plant improvements before it would approve sewer extensions, while it applied a different standard to the Minneapolis-St. Paul Sanitary District.

This is the same Commission that has permitted the Minneapolis-St. Paul Sanitary District to compile this record without issuing an order objecting to its activities:

1. In 1952 the Pig's Eye plant reached its design capacity.
2. In 1956 the Minneapolis-St. Paul Sanitary District began a five-year study to determine what improvements it should have had in operation by 1952.
3. In 1966 the Minneapolis-St. Paul Sanitary District completed its expansion. It dis-

covered that it had neglected to provide adequate sludge disposal facilities. As a result, only one-third of the sewage received at that plant receives intermediate treatment, the remainder receives only primary treatment and the total effluent still contains 60 percent of the raw sewage BOD.

4. During this period the Commission demanded that metropolitan area suburbs discharge their wastes into the overloaded Pig's Eye plant without requiring expansion of the plant.

In the event that there is any question of the dedication of the North Suburban Sanitary Sewer District to the principles of effective water pollution control measures, the District respectfully requests that each conferee read the complete text of the District's written statement to this Conference on February 7, 1964, and review the transcript of the proceedings in Anoka County District Court covering the District's appeal from a "prohibition" in the guise of a standard.

There has been litigation between the NSSSD and the WPCC. The complaint that this litigation is a delaying factor in the efforts at a solution to the problem of pollution is simply not true. While the NSSSD has been engaged in litigation it has, during that same time, provided sewers to the residents of its area, and taken all measures that can be taken to avert pollution. These efforts by the NSSSD and its component municipalities have involved an expenditure in excess of 20 million dollars.

The litigation engaged in by the NSSSD has been aimed at preventing unlawful efforts in controlling pollution. Specifically, this District (and the other communities also engaged in litigation with the Commission) has contended that the WPCC has no power or authority to absolutely prohibit the discharge of treated sewage effluent which does not affect the receiving waters in excess of established standards and, in addition, that even if they did have that authority, it has been exercised in a way that does not further the objectives of clean water.

The Anoka County District Court has rendered a decision upholding the position of the NSSSD. At the same time, the Court affirmed the remaining standards of quality and purity. Any delay occasioned by the litigation can be, and always could be, averted by the WPCC if it would rely on its standards as affirmed by the Court.

The NSSSD is currently discharging the sewage collected in its system to the MSSD system, by contract with the City of Minneapolis. The outlet capacity available to the NSSSD will have been exhausted shortly after 1970, according to population projections, and the sewage from the NSSSD area must then either be discharged through its own treatment plant or massive interceptors must be built to transport the sewage some 20 miles to Pig's Eye. The NSSSD is anxious to commence its engineering plans for treatment facilities to meet the crisis which will develop. It is not interested in delay. It is the WPCC, not the NSSSD, which is prolonging the litigation and thus delaying plans for pollution control.

It has never been the position of the NSSSD that it should be permitted to operate without regard to legitimate standards. The declaratory judgment action commenced by the District was brought for the purpose of clarifying the law and to insure that the WPCC did not succeed in unlawfully prohibiting any sewage treatment plant which could conform to water quality standards. It was not intended, nor did it result, in any delay of any kind. A delay may occur shortly if the NSSSD is prevented, by the WPCC's appeal from commencing the engineering plans for the treatment facilities which will be needed by the time the limited outlet capacity available to NSSSD through Minneapolis sewers is exhausted.

The NSSSD has always been a champion of clean water and pollution control. It has always proposed that it construct a treatment plant employing an activated sludge process. The District holds itself to the highest standard of engineering design and water quality. If its insistence that these same high standards be applied to others has incurred the wrath of the WPCC, it has, at the same time, produced results in terms of pollution control.

It is hoped that the foregoing memorandum makes it clear that the North Suburban Sanitary Sewer District has been, and continues to be, genuinely interested in clean water. It pledges its cooperation in working toward achieving that objective.

PART II

The North Suburban Sanitary Sewer District, in its written statement submitted to this Conference on March 1, 1967, raised a question as to the practical effects of applying "whole body contact" bacteriological standards to the navigation channel of the segment of the Mississippi River designed as Zone I in existing State standards. The question involves the lower 3.6 miles of the Zone and has been referred to as the Upper Harbor Navigation Channel. (River miles 854.0 to 857.6)

At the outset, we find support for this position not only in our own observations, but in this "Finding of Fact" from Page 3 of the aforementioned Chairman's Report on Hearing.

"The River is not considered suitable for bathing or swimming at present. Nor is it considered to have such potential use in the future because of hazards associated with the nature of the river."

Essentially the District's position is that if there is any logic in removing the Hastings Pool from "whole body contact" recreation uses and the restriction of fishing uses in that area, that same logic should be applied throughout the study area and particularly to the Upper Harbor Navigation Channel. Conversely, if whole body contact is to be permitted in the areas presently contemplated, logic compels that whole body contact should be permitted in the Mississippi River below the Pig's Eye plant.

The basis for the exclusion of that part of the river from whole body contact cannot have been based on logic. It must be based on the expedient of permitting the MSSD Pig's Eye plant to continue to treat sewage at a level considerably below the level that is feasible.

The Hastings Pool (River miles 847.0 to 815.0, and specifically that portion downstream from the Pig's Eye outfall,) represents one of the largest unobstructed water surfaces in this metropolitan area. Marinas have already been developed within the pool. Within the Hastings Pool the river current is lower than at any other point in the metropolitan area. The banks of the Hastings Pool are sparsely developed and access to the water could be readily developed anywhere along more than 40 miles of shoreline. The Pool has numerous islands, bays and sand bars that make it particularly suitable for recreational uses.

By way of contrast, the Upper Harbor Navigation Channel represents a narrow stretch of the river approximately 3.6 miles in length, the entire bottom of which has been disrupted by dredging operations to develop a barge terminal area. Its banks slope too steeply for safe access for swimming. It is flanked by industrial establishments and this stretch is crossed by five bridges.

The silting of the channel bottom itself, the dredging of the silt to maintain optimum navigation water depth and the commercial navigation uses to which this stretch has been committed will continue to make this stretch of the river unsuitable for fish propagation.

Just as the Hastings Pool has been continually subject to pollution from inadequate and bypassed sewage treatment facilities, the lower 3.6 miles of the Upper Harbor Navigation Channel have been continually subjected to discharges of raw sewage from Minneapolis combined sewer overflows.

The foregoing is offered to support the District's position that there is no technical reason for anything other than uniform dissolved oxygen and bacteriological standards for the entire stretch of the Mississippi River included in this study. The Upper Harbor Navigation Channel can be maintained for whole body contact so far as any discharge by the NSSSD is concerned, if there is any purpose in so doing which would justify the relatively small increase in operating cost which would be involved, and if dredging and barging will not preclude this use in any case.

The North Suburban Sanitary Sewer District is less concerned with changing the bacteriological standard applicable to the Upper Harbor Navigation Channel than it is with the need for elevating the standards for the downstream segments of the river.

While the NSSSD has noted practical drawbacks to the actual use of the Upper Harbor Navigation Channel for whole body contact activity, it does not object to the suggested water quality standards which would permit that use, provided that the standards applicable to such use are applied uniformly to the Mississippi River in the entire stretch of that river from the upstream end of the Upper

Harbor Navigation Channel (River Mile 857.6) to the confluence of the St. Croix River (River Mile 812).

* * * * *

TOLTZ, KING, DUVALL, ANDERSON
AND ASSOCIATES, INCORPORATED
ENGINEERS AND ARCHITECTS
1408 Pioneer Building
Saint Paul, Minnesota 55101
March 3, 1967

Federal Water Pollution Control Administration
Department of the Interior
Great Lakes Region
33 East Congress Parkway, Room 410
Chicago, Illinois 60605

Attention: Mr. James O. McDonald
Chief, Construction Grant Activities
Re: Sewage Treatment Plant and Sewage Pumping
Station - Commission 5015-5013
Hastings, Minnesota. Project WPC-Minn.-475

Gentlemen:

We are writing you with reference to the receiving of bids for the sewage treatment plant remodeling and additions and construction of the sewage pumping station.

The bids for the treatment plant and pumping station were scheduled to be received at 2:00 P.M., Thursday, March 16, 1967.

A conference was held at the Leamington Hotel in Minneapolis on Tuesday and Wednesday, February 28 and March 1, which was conducted by Mr. Murray Stein of the Federal Water Pollution Control Administration, to discuss the Summary and Pollution Abatement Recommendations prepared by the Federal agency for the Upper Mississippi River and major tributaries.

The City of Hastings was represented at the conference by the writer, who is the City Engineer of Hastings, and after the hearing we discussed the design of the Hastings sewage treatment plant with Mr. Lyle Smith and Mr. Don Thimsen of the Minnesota Water Pollution Control Commission. It was decided that the design criteria which was furnished us by the State of Minnesota for the design of the treatment plant should be reconsidered in light of the findings and recommended water quality standards of the Federal agency.

The engineers of the Minnesota Water Pollution Control Commission recommended that the plant be redesigned to provide for an 80 percent or better reduction of BOD, and on the basis of utilizing the step aeration process with a BOD loading of 40 to 50 pounds per 1000 cubic feet of aeration capacity.

The opinion was expressed that a plant designed on this basis would exceed the 80 percent minimum treatment efficiency recommended in the report presented by the Federal Water Pollution Control Administration.

We ask approval of postponing the receiving of bids for the sewage treatment plant and the sewage pumping station, scheduled for 2:00 P.M., March 16, 1967, to 2:00 P.M., May 4, 1967, and issuance of a new Wage Schedule to provide for taking of bids on May 4, 1967.

Bids for the interceptor sewer will not be postponed and will be received on Thursday, March 16, 1967, 2:00 P.M., as scheduled. The interceptor sewer is not affected by the recommendations contained in the report of the Federal Water Pollution Control Administration for the Upper Mississippi River and major tributaries.

Yours very truly,
TOLTZ, KING, DUVALL, ANDERSON
AND ASSOCIATES, INC.
(Signed) Arnold M. Steffes
Arnold M. Steffes P.E. City Engineer

AMS:f

cc Mr. W. Erickson, City Clerk)

* * * * *

MR. STEIN: We are happy to welcome Mayor Jelatis and Mr. Wilson. We recognize the snow conditions outside, and we are very glad to have you. We were just getting through the preliminaries, and I think nothing has been lost.

As you people know, this is the second session of the conference. The conferees unanimously agreed to the conclusions and recommendations of the first session. Two of these are required by statute and are pertinent to this discussion, and unless anyone wants to reopen them, there will be no reason to modify these conclusions we arrived at earlier on February 7th and 8th, 1964.

The first is that pollution in these waters -- that is, the waters from industries, municipalities and stormwater overflow sources -- have created a health hazard to persons engaged in water contact activities, causes visual nuisances, interferes with fish and fishing, causes sludge banks which give off noxious odors and floating sludge, and interferes with bottom aquatic life and with feeding and spawning grounds for fish propagation, and this pollution must be abated.

The second point was the Wisconsin and Minnesota Water Pollution Control Agencies have active water pollution control programs. The delays, if any, in abating the pollution are those which may be expected to occur in the execution of the pollution abatement program of a large metropolitan area.

Now, with that, if we can use this report of the Technical Committee as a basis of discussion and recommendations, plus the recommendations that were made in the report that was issued here and discussed a few weeks ago at the second session of the conference, I believe we can proceed.

Again, while all the conferees have copies of this, I believe several people in the audience do not. I have not discussed this with anyone before, but to expedite matters, could we possibly have Mr. Printz, who has worked on the Technical Committee, come up here and read these item by item, and see if we can get agreement, going down these one at a time?

Mr. Printz, it is suggested, and again let us see if we can get the conferees to agree with this, that if we can just refer by reference to the no-change items, unless you want them read, we can save some time.

How do the conferees feel about that?

DR. HARGRAVES: Might it not be well if he refers to the pages too in the summary so that we can follow him?

MR. STEIN: Yes.

MR. SMITH: It should be noted that we haven't had an opportunity to review these summary changes.

MR. PRINTZ: For the record, my name is Albert Printz, Sanitary Engineer of the Federal Water Pollution Control Administration.

As directed by the last session of the conference, a technical session was held in Madison on the 13th of this month. The conferees present at that meeting were Mr. Lyle Smith and Mr. Theodore Wisniewski. I was one of the two representatives of the Federal Water Pollution Control Administration.

The purpose of that meeting was to go over these items in the recommendations in the report entitled "Summary and Pollution Abatement Recommendations for the Upper Mississippi River and Major Tributaries," which would be difficult to implement under the existing State legislation.

Concurrence on several recommendations was obtained at that meeting. We have reproduced the recommendations on which there was concurrence, and the Federal conferee has other recommendations to make in lieu of those for which there was no concurrence.

These have been put in a numerical sequence. They follow the same sequence, however, as contained in the Summary Report.

For the record, concurrence was obtained on those items numbered, and I will just read these numbers, Mr. Chairman, and these are all marked as "no change": 4, 5, 7, 9, 10, 12, 16, 18, 19, 21, 25, 27 through 32, and 33 through 37. There are minor changes in other recommendations, on which there will probably be concurrence.

I would like to go through those on which there had been changes, reading the recommendation of the Federal conferee. Would this be in order?

MR. STEIN: Yes. However, let me say this: I think the fact that the Technical Committee has agreed that there is no change does not necessarily mean that the conferees have accepted that.

MR. PRINTZ: That is correct, sir.

MR. STEIN: We are going to have to give the conferees a chance to read this over, and if the conferees have any point or any question on any one of these, we will take it up.

MR. PRINTZ: All right.

MR. SMITH: Mr. Chairman, are we assuming that the general statement made prior to the specific recommendations is to be included as part of the recommendations?

MR. STEIN: What page is that?

MR. SMITH: The top of Page 26.

MR. STEIN: What does the Federal conferee think?

MR. POSTON: I think that is a good statement. I would like to see it included.

MR. SMITH: We would like to make some

suggestions.

DR. JELATIS: Mr. Chairman, I think in the interests of some continuity and clarity, it might be well to read all of the recommendations. I don't think it would take too long.

Is this agreeable?

MR. STEIN: Is there any objection to that?

Why don't you read that general statement?

MR. PRINTZ: The general statement, not included in the result of the Technical Session, but read as contained on Page 26 of the Summary Report, reads as follows:

> "River water quality shall be preserved or upgraded, as required, to permit maximum use and full recreational enjoyment of the waters. Remedial measures necessary to attain this goal are given in the recommendations. The recommendations are given in two groups: General and specific. General recommendations cover the broad objectives of pollution abatement in the Project area. Specific recommendations are given for the solution of particular problems and are offered in addition to, not in place of, the general recommendations.
>
> "These recommendations represent the initial phase of a long-range and more comprehensive water

"resource development program for the entire Upper Mississippi River Basin. They apply to problems needing immediate correction.

"Although fertilization of the rivers and backwater areas is undesirable, no recommendations are made at this time concerning the installation of specialized treatment facilities designed to reduce nitrogen and phosphorus compounds in the waste effluents. Operation of treatment facilities so as to optimize nutrient removal will reduce the problem."

MR. STEIN: Mr. Smith?

MR. SMITH: In the third paragraph, we would like to reword this as follows:

"Although fertilization of the rivers and backwater areas is undesirable at this time," -- crossing out the words "no recommendations are made," but including "at this time," and crossing out the word "concerning" and leaving the remainder of that sentence, "the installation of specialized treatment facilities designed to reduce nitrogen and phosphorus compounds in the waste effluents," removing the period, and including "will be recommended when satisfactory methods are feasible," and crossing out the last sentence entirely.

May I read that?

MR. STEIN: Read the sentence as amended, then.

MR. SMITH: "Although fertilization of the rivers and backwater areas is undesirable at this time, the installation of specialized treatment facilities designed to reduce nitrogen and phosphorus compounds in the effluents will be recommended when satisfactory methods are feasible."

I think this is a little more positive statement.

MR. STEIN: All right. We have an addition at the end.

Is there any objection to that modification?

By the way, we are not going to move anything by too fast. In other words, if you have a second thought, we are not going to foreclose you from this. We will reopen it.

If there is no objection to that, we will --

DR. ODEGARD: I have a question on it.

MR. STEIN: Yes.

DR. ODEGARD: Is there going to be another conference when this will be recommended?

MR. STEIN: No. As I understand this situation dealing with nitrogen and phosphate removals, this is not a question of a conference, but a question of having some technical facilities and equipment or methodology that is going to work.

I think what Mr. Smith is getting at is that as soon as this is developed and we all can agree that we have something that is going to work, this will be recommended to be put into operation.

DR. ODEGARD: By whom?

MR. STEIN: By the States.

DR. ODEGARD: By the States?

MR. STEIN: By the States.

Again, I think on a lot of this we just have to rely on good judgments of the State and Federal people, and the local people and the industries. This is a question of something that works or does not work, and I do not visualize a difference between the States, us, industries and cities on whether something is going to work or not; but as soon as there is a feasible method that can be put into operation, the State will recommend that that be put in, where feasible.

The problem that I think Mr. Smith has is the one that I know I have. If anyone were to press me right now, Minnesota or Wisconsin, as to what they should do for phosphate removal, I am not sure that we can come up with a definitive answer.

MR. WILSON: Mr. Chairman, I should like to emphasize what Mr. Smith said. His proposed revision embraces a more positive and optimistic approach to this difficult problem than is indicated by the present wording of the proposed recommendation.

MR. STEIN: If there is no objection, that will be accepted.

May we go on?

DR. JELATIS: Mr. Chairman, just as a matter of clarification, I think the wording could be changed a little further.

The first word, "although," refers to the part that no recommendations are made.

MR. STEIN: Do you want to strike that?

DR. JELATIS: I think if this is changed to say, "Since fertilization of the rivers and backwater areas is undesirable," and then eliminate "at this time," and say, "the installation of specialized treatment facilities will be recommended," doesn't that read a little more sensibly?

MR. STEIN: Yes. Is that agreeable?

DR. HARGRAVES: Yes.

MR. STEIN: Change "Although" to "Since" and strike "at this time."

MR. MUEGGE: You will make two sentences out of it. You would have to.

MR. STEIN: Now, as I have it, it reads this way:

> "Fertilization of the rivers and backwater areas is undesirable. The installation of specialized

> "treatment facilities designed to reduce nitrogen and phosphorus compounds in the waste effluents will be recommended when satisfactory methods are feasible."

DR. JELATIS: Right.

MR. STEIN: Fine.

Will you go on?

MR. PRINTZ: Yes.

MR. SMITH: Just a minute, Mr. Stein.

MR. STEIN: Yes?

MR. SMITH: I have another addition I would like to have your consideration on. This would be a separate paragraph at this point, worded as follows:

> "The allocation of permissible loadings of the streams shall be made by the States within the context of their established laws and policies."

MR. STEIN: Is there any question on that?

Do you want to take that up now, or do you want to include this as a matter of policy?

How does the Federal conferee feel about that?

MR. DAMON: Would you repeat that statement, please?

MR. SMITH: "The allocation of the permissible loadings of the streams shall be made by the States within the context of their established laws and policies."

MR. POSTON: It seems to me that where we have adjacent waters, such as in the St. Croix, I have no objection to the States allocating within their laws, but I think there might be difficulty in making one State law fit with the other, and I would prefer to hold this off until we have gone further in the conference.

MR. STEIN: I think Mr. Smith has a point.

As I understand his point, it is this, and I am just trying to clarify this for consideration:

You may get into a matter of loadings, say, in terms of phenols or pounds per day of BOD. It may be a Federal interest, perhaps, to assign a total figure, say, to Minnesota and Wisconsin, but within the figure agreed to, each one of the States should have the freedom to assign the loadings to the installations or the outfalls that they think appropriate.

MR. POSTON: I would agree to that concept.

MR. STEIN: I think, unless I am mistaken, that is what Mr. Smith was driving at.

MR. SMITH: This is correct.

MR. WILSON: Mr. Chairman, might I add to that?

MR. STEIN: Yes.

MR. WILSON: I think that Mr. Poston's apprehensions indicate a somewhat undue concern with a matter which

I think is obviously within the State jurisdiction. As long as the total loading is limited by the recommendations here, neither State could do anything which would in any way increase that loading to the prejudice of the other, and what each State does within its own jurisdiction, as long as the overall limits are observed, is obviously of no concern to anyone else.

That has always been recognized as a matter for the determination of the State authorities.

MR. STEIN: Do you want to hold that, or do you want to let it go in?

MR. POSTON: I would withdraw any objection.

MR. STEIN: I have one technical suggestion, and maybe as a lawyer I say this to you State people: I think you are being unduly restricted by the word "established." That may hold you back to what exists at the present time. If I were working for the States, I would suggest you might want to strike that.

MR. SMITH: The word "established"?

MR. STEIN: Yes. Why do you need that?

MR. SMITH: Yes.

MR. STEIN: Because you do not want to raise the spectre that you have frozen this at any one time. You may be changing your laws and regulations.

MR. SMITH: This is a point well taken.

MR. STEIN: If that is accepted, we can proceed.

Do you want to read that sentence again, just for the record?

MR. SMITH: "The allocation of the permissible loadings of the streams shall be made by the States within the context of their laws and policies."

MR. STEIN: Right. Now, that will appear at the end of the last statement?

MR. SMITH: This is correct.

MR. STEIN: All right. Is there any objection, or do we agree?

If agreed, and if there are no further comments, let's go on to the next item.

Mr. Printz?

MR. PRINTZ: The Recommendation No. 1 of the Federal conferee would read then:

> "Waters of high quality within the study area and of a quality suitable for all present and potential water uses, be maintained and protected so as to ensure their suitability for all future uses."

MR. STEIN: Any comment or question on this?

MR. MUEGGE: Does this bar all future development?

MR. STEIN: I would hope not.

Mr. Printz, the question was: Will this bar all future development?

MR. PRINTZ: No, sir, to the contrary. This would --

MR. POSTON: Promote future development.

MR. PRINTZ: This would promote future development.

DR. ODEGARD: How does it change it from what it was before?

MR. PRINTZ: It does not. It gives a different interpretation of that wording.

MR. STEIN: Mr. Printz, why don't you indicate, as you read these, where there might have been a change or where there was substantial agreement among the technical people, so that we can flag these?

MR. PRINTZ: Yes. There was substantial agreement on this item among the technical people.

DR. JELATIS: Mr. Chairman, I think it would be clearer if we point out that this seems to be an addition to the original recommendation.

MR. PRINTZ: No. This would be a substitute for the original recommendation.

DR. JELATIS: I see.

MR. WILSON: Which paragraph?

MR. PRINTZ: For Recommendation No. 1.

DR. JELATIS: This is on Page 27. Is that correct?

MR. STEIN: Yes. This is a rewrite of Recommendation No. 1. Is that correct?

MR. PRINTZ: That is right.

MR. STEIN: Is there any objection to this?

(No response.)

MR. STEIN: If not, let's go on. Again, you are not foreclosed. If you have any second thoughts or you want to come back to any item at any time, we will be happy to do it.

Mr. Printz?

MR. PRINTZ: There was also general agreement on Recommendation No. 2 of the Federal conferee, which would replace Recommendation No. 2 found on Page 27 of the Summary Report. This will then read as follows:

> "2. All waters presently unsuitable for present and potential water uses be upgraded and enhanced as stipulated in the remaining recommendations, so as to ensure suitability for present and potential water uses as determined in part by the following dissolved oxygen and bacteriological levels in the given segments:"

This is followed then by the table listed on Page 26 of the Summary Report. This table is to be maintained in its entirety, with the exception that on the river reach of the St. Croix River between Taylors Falls and the mouth, the coliform guide shall contain only Guide No. A. Guide C has been deleted. Other than that, the table stands as reproduced in the Summary Report.

MR. STEIN: Are there any suggestions?

Again, you are dealing with technicians here. Why do you use the word "remaining" instead of "following" recommendations?

MR. PRINTZ: Because in No. 2 it could be either "following" or "remaining," but we were relating it to the additional recommendations.

MR. STEIN: I know. That word is kind of an unusual word of art. If that word doesn't bother you people, it is all right with me.

DR. ODEGARD: Mr. Chairman, another point.

I have a feeling, having thought about this now for two weeks, that there is need for another category for a particular stretch of the river.

I understand the Minnesota River is too turbulent to be considered for swimming. However, this is an area that is extensively used by some people for water skiing at the present time.

I wonder if there isn't a point in which you refer to the turbidity in having a coliform guide standard?

MR. STEIN: Is there any comment or question on that?

It is your proposal that the Minnesota River be listed and that we strike the "B's" and make them "A's"?

DR. ODEGARD: Yes, with the exception of the turbidity.

MR. STEIN: With the exception of the turbidity. It would be the "A" standard except for turbidity.

Are there any comments or questions on that?

MR. SMITH: Actually, the requirements for the whole body contact uses with turbidity be at a lower level. It does not qualify under natural circumstances for whole body contact.

DR. ODEGARD: My point is that people do use it and get into it, and turbidity is not a health standard, so this should be a case for a separate standard, or is this wrong?

MR. STEIN: I am not sure. Again, I am trying to clarify the situation here.

Generally speaking, we have submitted turbidity as a safety matter. That is, if a man goes under in turbulent waters, anyone who is going to try to save him is going to have some difficulty in locating his body when it goes down. Generally speaking, when waters are that turbulent and inhibit vision -- and again, as you know, I have worked in the health field with a lot of these people for many years -- as a safety factor, and not from a bacteriological point of view, we have said those waters were unsafe for swimming, because it wouldn't permit recovery of a man or a woman in distress.

DR. ODEGARD: Do you prohibit water skiing now?

MR. STEIN: Now, what you are doing is raising the question, and this is the issue. I am just raising the issue with you people.

The point is, if you have water skiing on those waters, you have to recognize that given the nature of the activity, someone is going to be immersed in that water with his whole body from time to time. The question here is, it seems to me, with that limited kind of activity, would that create a health hazard to someone getting in the waters of the Minnesota River, other than the safety factor or lack of vision?

I don't know. This is the issue. I wonder if the technical people could speak to this.

MR. SMITH: Well, of course, the point I believe that we have to determine here is whether we want to maintain this water at a coliform number of 5,000 or 1,000. Five thousand is for partial or limited body contact, and 1,000 for swimming and water skiing.

At the time the Water Pollution Control Commission held its hearings, it was proposed that the lower area be maintained for whole body contact, and there was no testimony taken to support this.

MR. STEIN: All right.

MR. SMITH: This was the hearing back at the time the lower section of the Minnesota River was classified and standards were set.

MR. STEIN: I would like to get a view on that. Again, let me try to narrow the issue.

As I understand this, you are proposing that the coliform count in the Minnesota River be 1,000 instead of 5,000?

DR. ODEGARD: Yes, sir.

MR. STEIN: All right. If you want to think about this and pass this and come back to it, we can, or if you want to make a judgment now we can poll the conferees.

DR. HARGRAVES: I think, Mr. Stein, we have gone through this for days and days of hearings on the Minnesota River. A lot of it is barge territory where barges come up and down. There are snags in the river. There are mud banks.

I have felt I was a lone fighter for the Minnesota River of keeping it for its potential wildlife and possible park use in the future, but at the moment, with all of the runoff from the soils, from the various natural contaminations of the river, unless you are going to use enteric coli or staph as a criterion, then I don't think that it would be feasible to try to get to 1,000, with the long stretches there are between communities.

MR. STEIN: I would say, sir, as I see this, in looking at the map, this is essentially a Minnesota problem, and I think both the Wisconsin and Federal conferees would like to have Minnesota recommend on this.

I take it that you people would prefer that this remain in the "B" classification. Is that correct?

MR. SMITH: Yes, sir.

DR. HARGRAVES: For the time being, yes.

MR. HOLMER: Having raised the question, Wisconsin is willing to abide by Minnesota's decision about Minnesota's water.

MR. STEIN: How does the Federal conferee feel about that?

MR. POSTON: I agree.

MR. STEIN: All right. We can go on.

MR. PRINTZ: Mr. Chairman, there is one additional sentence which was inadvertently left off of the mimeographed sheets which would follow the table reproduced on Page 26, and this is simply putting back into this statement some of that which was contained in the original No. 2. It would read as follows:

> "These levels shall be maintained during flows equal to or greater than the seven-consecutive-day, once in ten-year summer and winter low flows."

MR. STEIN: Is there any question on that?

MR. JOHN MASON: Mr. Chairman, are comments from the floor permitted?

MR. STEIN: No. I'm sorry. We announced last time that this is just for the conferees.

We are going to have to have a couple of technical changes here, and these are very small.

Relating to that footnote you have, you will issue the coliform guides as an appendix?

MR. PRINTZ: That is correct.

MR. STEIN: Rather than as a reference to the Summary, you will issue the coliform guides as an appendix?

MR. PRINTZ: Yes.

MR. STEIN: So it will be self-contained in one document.

DR. HARGRAVES: One question arises in my mind, Mr. Stein:

If we accept this seven-day one in ten years, can we sort of feel this may be universally accepted by other States? Does Wisconsin feel that it will accept it, and other States the same, so we all talk the same language?

Mr. Stein: Does Wisconsin want to comment on that?

MR. WISNIEWSKI: Yes. Actually, we are choosing the seven-day consecutive minimum flow in the most recent ten years rather than any ten years.

DR. HARGRAVES: The most recent ten years?

MR. WISNIEWSKI: Yes.

DR. HARGRAVES: We have no objection to it in this particular conference, setting our sights for the rest of our 4,000 miles of stream, plus other inland waters.

MR. STEIN: I think this is emerging as the requirement in other parts of the country.

By the way, I would agree with you, Dr. Hargraves. I certainly sympathize with you on that question raised on the Minnesota River, and I agree with the way you put that in for the time being.

DR. HARGRAVES: Right.

MR. STEIN: I think in the same sense, we are finding our way with the seven-day once in ten-year summer and winter minimum flow. I think this is what the theoretical people have zeroed in on. I suspect, like in any other field such as law or medicine, once we put this into practice -- and we have not had this in really universal practice up until now -- that there might come a time when we modify it.

Our best thinking now is that almost all the States are coming up with this kind of a protection, and I suspect that this will be the test in most of the standards which are adopted.

DR. HARGRAVES: All right. Thank you.

MR. STEIN: May we proceed?

MR. SMITH: Just a moment.

Mr. Wisniewski, I think in our discussions in Madison, wasn't there a question in the deleting of the words "for any one sample" at the heading for the dissolved oxygen and coliform guide?

It now reads, "maximum or minimum concentrations for any one sample." We would prefer to strike "for any one sample."

MR. STEIN: Why?

MR. SMITH: Because we think this is unduly restrictive. Any sample at any time that was in excess of these figures could put an industry or municipality in violation, and there must be some interpretation of these values.

DR. HARGRAVES: Scientifically, it isn't very sound to take only one single grab sample without having variable samples and taking a mean.

MR. WILSON: Mr. Chairman, might I add, you certainly will appreciate as a lawyer that that would be a very difficult basis for evidence in court, to depend on a single sample, in case you got into enforcement proceedings.

It would be highly desirable to have all these recommendations framed, as far as possible, so that the findings thereunder will lend themselves to providing evidence in court, if that should become necessary.

MR. STEIN: I appreciate your point of view.

Whatever the law says, Mr. Wilson, I don't think either of us have ever gone into court with one sample.

What is the feeling on this? Do you want to strike that and say "maximum and minimum concentrations"?

MR. SMITH: This is correct.

MR. POSTON: Wouldn't that still apply to the single sample there, unless you had some other defining wording in there?

MR. SMITH: Not necessarily.

DR. JELATIS: You have to take more than one sample to be sure you have a case.

DR. HARGRAVES: Couldn't you just say "multiple samples"?

MR. STEIN: I think once you get into specifics on this, you may be in more trouble than you want to be. If you are going to strike, strike it. That is my suggestion, either way.

MR. HOLMER: I would prefer that we strike.

MR. STEIN: Is that agreeable to you?

MR. POSTON: Yes.

MR. STEIN: All right. With that, may we go on, please?

MR. SMITH: Not quite.

MR. STEIN: All right.

MR. SMITH: I would also like a discussion on the DO levels. The statement as written is, "no deterioration in present level."

Now, I think we need an interpretation of this. In our previous statement, we had indicated that, "Waters of high quality within the study area and of a quality suitable for all present and potential water uses, be maintained and protected so as to ensure their suitability for all future uses."

Now, in this table we are indicating "no deterioration in present level."

I think this has to be clarified. I would prefer that the "no deterioration in present level" again be stricken.

DR. HARGRAVES: And the oxygen levels left as they are?

MR. SMITH: As they are.

DR. HARGRAVES: Just leave the oxygen levels as they are.

MR. STEIN: Don't you have a greater than 5 level now?

MR. PRINTZ: Considerably.

MR. STEIN: You don't want to get down to 5?

MR. SMITH: Not at all times.

MR. PRINTZ: In many areas, I do believe you have considerably higher than 5 at all times.

MR. SMITH: At all times during your survey work. Not at all times.

DR. HARGRAVES: Doesn't it come down to a point that if you put "no deterioration in present level," you are shutting the door on development?

MR. STEIN: Let's see if we can arrive at an accommodation.

MR. SMITH: Can we, and be consistent with the first recommendation?

MR. STEIN: I am trying at this stage to get an agreement.

Isn't that really covered in what you agreed to in the first sentence?

> "River water quality shall be preserved or upgraded, as required, to permit maximum use and full recreational enjoyment of the waters."

MR. SMITH: Right.

MR. STEIN: Now, wouldn't that take care of that, if we acceded to Mr. Smith's suggestion?

MR. HOLMER: We don't see that it makes any particular difference whether it is in or out.

MR. POSTON: In the first paragraph or here?

MR. HOLMER: Right.

DR. HARGRAVES: But it is redundant.

MR. STEIN: Are we agreeable to striking it here?

MR. POSTON: Yes.

MR. STEIN: All right. Let's move on.

Are there any more comments on No. 2 before we move on?

(No response.)

MR. STEIN: If not, let's go to No. 3.

MR. PRINTZ: No. 3 did not receive unanimous agreement at the technical session. However, it is the Federal conferee's recommendation that:

> "3. All municipalities and institutions discharging sewage to the waters within the conference area, provide at least secondary biological treatment facilities consisting of at least 90% removal of organic material in terms of BOD, plus continuous disinfection producing an effluent containing no more than the following constituents:
>
> a. 30 mg/1 5-Day ($20^{o}C$) BOD
>
> b. 30 mg/1 suspended solids
>
> c. 5000 coliform/100 ml (except where "d" applies.)
>
> d. 1000 coliform/100 ml between May and October, inclusive, where receiving

"waters are used for whole body contact activities.

"These limits are to be followed except where more stringent ones are given in the specific recommendations or are required by State Water Pollution Control agencies."

MR. MUEGGE: This appears to be a shift from water quality to effluent quality standards, and I think we should stick with water quality criteria.

MR. SMITH: I would object too. I see no reason for going to 90% BOD removal. It has no bearing directly on the protection of the water uses.

If a statement like this is contained in the recommendations, I see no reason for the investigation in the first place.

MR. STEIN: What would you suggest that we modify it to and say?

MR. SMITH: I prefer that it be left as it was originally, with an addition that in no case should the five-day BOD or the suspended solids exceed 50 milligrams per liter. I will put a limitation on it, but not as restrictive as the 90 percent removal, or the 30 milligrams.

MR. POSTON: In your presentation at our last convening of this present conference, you indicated a desire for 30 milligrams per liter.

MR. SMITH: No. We were questioning the method on which the 50 milligrams was calculated and said nothing about 30 milligrams, as far as 5-day BOD was concerned.

We would not support the 90 percent BOD removal. We are talking about the minor sources. We see no justification for this.

MR. MUEGGE: I think the decision has to be made here whether we want water quality or effluent standards.

DR. HARGRAVES: Well, the two are rather inseparable and you get into problems.

The point in question here is that there are some very small communities on a great, big river where, even if they have primary treatment, it doesn't affect us. I am all for as high treatment as we can get, but one gets up into the Twin Cities complex and it becomes an altogether different story.

I think on the Wisconsin side of the Minnesota you have primary treatment, haven't you, in some of these smaller towns, just as we have, and their study has shown nothing, as far as I can tell, in the way of contamination, dissolved oxygen loss, and this would be a tremendous cost to small villages and towns on a big stream.

MR. STEIN: I can well understand that, sir.

Again, I have not been in the discussions, but I think that in dealing with this -- and this is the nub of the problem we have in many, many of the areas -- that when you have a situation like this you can't possibly deal with this by a hard and fast rule without giving the States some interpretation on this.

By the way, if you get a city like St. Louis or Omaha, where they are all coming out and you have one big source, then you decide how much to have.

However, as I understand it, it is agreeable that the major sources put this in?

DR. HARGRAVES: Yes, while we are upgrading smaller cities, such as Lake City, Hastings, etc., down the river, and they are going to secondary. Yet, as I say, there are times you feel a little guilty when the city fathers come after you for spending their money for something that they say has not affected the river anyway.

I am for as clean a Minnesota River as we can get, but there are times when some of these little places can have primary treatment that doesn't affect BOD at all.

MR. STEIN: Well, one of the ways of handling this -- and I don't know if you want to do that -- is "among all the municipalities." If you put "all major municipalities and institutions" and let this be a judgment of the State agency, would this be agreeable?

MR. MUEGGE: Well, there is even a possibility that you may want a lower concentration in the effluent.

MR. STEIN: No. It says "at least 90 percent."

MR. MUEGGE: At least 90, but you have a 30 milligram per liter.

MR. STEIN: Yes, but it says, "These limits are to be followed except where more stringent" --

MR. MUEGGE: You may want 95.

MR. STEIN: Pardon me, Mr. Muegge.

Again, my function here is just to try to get agreement, but look at the last sentence. It says:

> "These limits are to be followed except where more stringent ones are given in the specific recommendations or are required by State Water Pollution Control agencies."

So I think the recommendation does come up and allows the State for a more stringent one.

I think what Mr. Smith and Dr. Hargraves are looking for -- and I would at least try to arrive at a formulation -- is that you want an escape hatch at the bottom for some small community that might be putting in primary treatment, or may have a trickling filter that gets a reduction to, say, 75 or 80 percent. When their wastes get in the river you can't really see it a hundred yards away from the outfall, and this might be an undue burden. This is what I think is the thrust of this argument.

What I am trying to do is see if we can come up with a word or a phrase which would be agreeable to you people to give you this discretion.

MR. POSTON: Mr. Chairman, I find that when we talk to one community, it looks to see whether it is being done in another community, and one of the objections is, "Well, why don't you require it over here?"

In order to be fair and to be equitable and to avoid double standards, I would like to see one figure here so that everybody is being treated alike. It seems to me that this is the best way to get along with all these communities.

MR. STEIN: Mr. Holmer?

MR. HOLMER: Yes. I would like to avoid double standards too, and I am curious to know whether 80 percent or 90 percent is now the national standard. I recognize that over a time we are going to have to move as population expands upward, but the original Recommendation No. 3 seems to be generally in accord with the generally applied current standards, and we had no problem with it particularly.

This 90 percent, is this now a national standard that has to be applied at every conference on every interstate stream?

MR. POSTON: I might talk to that a little bit.

I think 90 percent is readily achievable by secondary treatment in well designed plants, and the feeling is that where secondary treatment is required we should go and get this maximum efficiency in the treatment plant.

MR. SMITH: This is the point, where it is required. Are you going to require Kansas City, St. Joe, Omaha, to provide 90 percent?

I think this is the consistency that I am concerned with.

MR. MUEGGE: I am also concerned with Mr. Holmer's last statement. I would like to see secondary plants all producing the 90 percent effluent.

MR. WILSON: Mr. Chairman?

MR. STEIN: Yes.

MR. WILSON: From the basis, as you know, of rather long experience in court battles and in enforcement in this water pollution control field, I should like to say that I certainly agree with Mr. Poston's ambition to have here some kind of a positive statement of the desired goal if it were possible to devise one that would apply fairly in all cases. But I think that anyone who has dealt with this problem of percentages has learned the hard way, if he did not learn earlier, that absolute fixed percentages are a very undependable way to set a standard which has to apply to a great variety of cases where the conditions and circumstances are vastly different. It is obvious that the condition of a large community with a well designed sewage treatment plant that can be operated and maintained up to rather specific standards is quite different from that of a small community, where the per capita expense of operating plants is much greater, and where the actual effect of the effluents on the receiving stream is comparatively small.

The result of that situation is that if you get into a situation where the cost of meeting this 90 percent removal would be unduly oppressive on a small community and utterly unnecessary from the standpoint of the total condition of the receiving water, any court passing on that question would have to say that your water pollution control commission was imposing an unreasonable requirement. Therefore, it seems to me that the attempt to express an exact percentage in a situation of this kind where the circumstances to which it applies will be very variable, would be just the opposite of the idea that Mr. Poston is expressing here, that we should have some uniform rule.

The only uniform rule that you can apply in a case of this kind is a rule that can be applied as a general objective, but can be adjusted to different conditions in the judgment of the enforcing agency.

This is the very sort of thing where the enforcing agencies and the administrative agencies of government have to have considerable latitude of judgment in applying the standards and requirements to different cases. So that I don't see how you can express the idea that we all endorsed here -- that is, as Dr. Hargraves says, we are all interested in trying to get our lakes and streams as clean as possible, but I don't see how you can express this degree of removal of organic material for general purposes any better than to simply say that the removal as high a degree as feasible under the circumstances of each case shall be required for the organic removal.

I don't see how you can put in any positive percentage that will apply fairly and stand up against an attack in all cases.

DR. JELATIS: Mr. Chairman.

MR. STEIN: Yes.

DR. JELATIS: I think we all appreciate that it is desirable to do the best possible job in ensuring the water quality, but I think also it has been amply pointed out that 90 percent removal in an area where there is very little current to the stream, even with no treatment, imposes an undue burden. I think also that most of us feel, I think with general agreement, that secondary treatment should be desirable in all cases.

Can we modify this statement by saying that where necessary to maintain the water quality objectives, secondary treatment shall be required, and perhaps modify the percentage removals, or leave them out?

MR. WISNIEWSKI: Mr. Chairman, wouldn't this all be resolved if we simply recommend to the Congress to appropriate sufficient funds, so that when the community does 90 percent removal it get a 90 percent grant, and when it does 30 percent removal, it get a 30 percent grant?

(Laughter.)

MR. STEIN: I will tell you, Milt Adams of Michigan once had an analogous recommendation to Congress that he put forward, and he said that the grant funds should go only to those cities and those Congressional Districts whose Congressmen voted for the appropriation. Obviously, the men who voted against it didn't want it.

Well, we were involved in a storm for about six months. I always enjoy those storms, but I don't know that I would care to join in that recommendation.

(Laughter.)

MR. WILSON: Mr. Chairman, I don't see how you can express any rule here that will express our desire and at the same time be fair in application in any broader terms, or any stricter terms than what I suggested, consisting of as high as feasible removal, and so far as necessary to protect the quality of the stream.

You can put it into language of that kind, if you want to, and, of course, if Uncle Sam were going to dish out Federal aid so that these smaller communities would get a higher degree of aid and enable them to put in 90 percent treatment even if they didn't need it, why, they would be perfectly willing to go along, but I think that every taxpayer would have to say that that is a waste of public funds. In view of the acute financial condition of both the Federal and State treasuries, it does not seem to me that we here ought to make any recommendations that are going to require unnecessary expenditure of public funds for any purpose.

MR. STEIN: Are there any more comments or questions?

Mr. Poston?

MR. POSTON: I think we are looking for something here that everybody who lives in this area can look for as the requirement that they are going to want to meet and need to meet, and there is an opportunity in the last page of our recommendations where modifications are required, that the conferees can make modifications as they deem necessary. I have the feeling that this should be able to cover when we come into particularly knotty areas for resolution.

MR. HOLMER: I find that very soft consolation.

MR. SMITH: I do too.

MR. HOLMER: And I would think for us to pass by this recommendation without reaching agreement on the promise of the last page, which merely provides that the conference will take disagreements under advisement, is not very satisfactory.

May I inquire on what basis the Federal staff or the Federal conferee arrived at a change in the original recommendation made in the Summary Report?

MR. POSTON: I don't know that I can answer all that. The original recommendation read; "20 percent of the mass of 5-day BOD," which meant 80 percent, and on this we felt that it is possible -- in fact, I called one of the treatment plants and found out that the local treatment plant had an effluent of 12 parts per million BOD, and I felt that to have a limit of 50 there was excessive.

I think the operation and maintenance of treatment plants has a lot to do with this 30 milligrams, or 50 milligrams.

It is more difficult to get a good operation, I will admit, in a small unit. It is difficult to get good maintenance in these, but it can be achieved, and this is what I think we are shooting for.

MR. SMITH: Actually, the 50 percent is more restrictive than what you have, because 20 percent of the BOD remaining in an effluent that may be 1,000 parts per million to start with is pretty high, and this is what we are trying to get at.

MR. STEIN: Yes.

As I understand the discussion that we had last time, Mr. Holmer, it was this: Assume that the technical staff is agreed on the original statement. The notion that we had given the water quality requirements that we just passed on the first page would indicate, and I think Mr. Smith has indicated here, that the large sources of pollutants in this area would have to provide the kind of treatment which would get a 90 percent removal, or above.

The notion that I got here was that possibly putting the 80 percent removal as a general rule might be misleading, since your major sources in this area were going to have to put in 90 that we all agreed to, so they decided to adjust this to this figure, and that is why it is done.

Mr. Smith, do you have a recommendation here on wording?

MR. MUEGGE: I have one.

MR. STEIN: Yes.

MR. MUEGGE: I would recommend No. 3 be reworded that, "All municipalities and institutions discharging sewage to the waters within the conference area, provide at least" --

DR. HARGRAVES: Would you speak into the microphone? We can't hear.

MR. MUEGGE: -- "provide at least well designed and operated secondary biological treatment facilities plus continuous disinfection."

MR. STEIN: What do you think of that, Mr. Smith?

MR. SMITH: I am not sure that I heard the first part of it.

Mr. Muegge, what does that do with the high strength influent?

DR. HARGRAVES: And what are the criteria for a high quality plant?

MR. MUEGGE: Well, the best that can be produced at the time under the scientific knowledge that is available.

DR. HARGRAVES: Not to be smart, but I just mean will the parts per million be taken into this, or is it a percentage?

MR. MUEGGE: No percentage, and there are no parts per million. There is no effluent standard.

MR. SMITH: I would prefer an effluent limitation.

I realize why you don't want this, but I am thinking of the stronger wastes.

MR. STEIN: May we have your proposal, Mr. Smith?

By the way, I think the people should recognize that Mr. Muegge's position is a very valid and sound philosophic one. What we are trying to do is get these together and see if we can arrive at a judgment, because this is one way that I think we can go.

Mr. Smith?

MR. SMITH: I agree with Mr. Muegge's statement wholeheartedly, with one exception. I would like to have some limitation on the strong effluents.

My original suggestion was that we take the statement as it was contained in the recommendation and add to that, "and in no case shall it exceed 50 milligrams per liter."

MR. STEIN: Which one, in the printed recommendation?

MR. SMITH: In the printed recommendation.

MR. STEIN: Where would you add that statement?

MR. SMITH: It would read under Paragraph "a," "20 percent of the mass of 5-day BOD originally contained in the effluent, and in no case shall it exceed 50 milligrams per liter."

I would add this same statement under both "a" and "b."

MR. STEIN: Just "a" and "b." Yes.

MR. SMITH: Just "a" and "b."

MR. STEIN: Yes.

MR. MUEGGE: I think that would be acceptable if you left out the 20 percent figure.

MR. SMITH: I have no objection to this.

MR. STEIN: What do you think of that, Mr. Poston?

DR. HARGRAVES: Mr. Poston, if we are taken into court, which we are on everything we have classified so far, and, as I remember, Chester, and you have to check on me, we were in part disqualified because we did not have figures and standards set so that the court could interpret them -- so many parts per million or so much in the effluent conditions of the stream taken into account. Am I right?

MR. WILSON: Yes, that is right. You have to have a measurable standard and you also have to have one that is reasonable.

MR. POSTON: My thinking is if they operate a primary treatment plant, and if they maintain it well, I think you can get it down to 30. This is my logic behind this.

MR. WILSON: Mr. Chairman, it seems to me that Mr. Smith's suggestion of going back to the original printed statement in Paragraph 3 at the top of Page 29, with his suggestions under "a" and "b," would certainly serve the purpose and leave the recommendations in a better situation than to go for this unqualified proposal for at least 90 percent removal.

I don't see how you can go forward with that unqualified percentage. It would have to be, as he suggested, to simply strike out the "90 percent," and say "as high as feasible," or else say, "90 percent as far as feasible."

MR. STEIN: Let's try to stay with Mr. Smith's proposal.

As I understand, Mr. Smith is proposing that we use No. 3 as we have it in the printed document, with the addition, after "a" and "b," "and in no case shall it exceed 50 milligrams per liter."

In other words "a" would read, "20 percent of the mass 5-day (20°C) BOD originally contained in the influent, and in no case shall exceed 50 milligrams per liter."

MR. SMITH: Mr. Muegge would like to leave off, I believe, the 20 percent.

MR. STEIN: Yes.

MR. SMITH: Which is agreeable to me.

MR. STEIN: Well, what do you think?

In other words, "a" and "b" would say, "an effluent containing no more than 50 milligrams per liter of BOD and suspended solids."

MR. POSTON: And then you would leave out No. 2?

MR. STEIN: You can combine "a" and "b" or you can leave them separate, if you want.

DR. JELATIS: Eliminating the percentage?

MR. STEIN: Yes.

MR. POSTON: In both cases you leave out the percentage?

MR. STEIN: Leave out the percentage. Is this agreeable?

MR. SMITH: This is agreeable to me.

MR. STEIN: All right.

MR. MUEGGE: What has been the practice, Mr. Chairman, at other conferences? Have you established effluent standards or water quality standards?

MR. STEIN: Yes, effluent standards largely, and water quality standards in some cases.

I think we are getting more and more to what Dr. Hargraves said. They are inextricably interrelated, and more and more we are doing both.

Now, I think that both of these buttress each other. This has been the case in other conferences. What has come up here -- and, by the way, I think this is going to be possibly the most difficult point we have today -- is really the pattern that is emerging in the other States, not much difference one way or the other, but each one goes a little further. I think it is as good as any I have seen.

In Chicago they came up with more detail, but again we did not have small points of discharge there. You have, in a sense, a more complicated and a bigger variety to deal with here, and while the pollution problem is serious, we could come out with a 90 percent disinfection for all, because we couldn't find any small places where it did not apply.

So, I don't know. If this is agreeable, let us try it again.

Would you read "a" as you would want it to read now, Mr. Smith?

MR. SMITH: "An effluent containing no more than 50 milligrams per liter, 5-day BOD and suspended solids."

MR. STEIN: Well, may I make a suggestion? Since this is not a novel, let's repeat to make it clear.

"This treatment is to produce an effluent containing no more than 50 milligrams per liter of" -- do you want "mass"?

MR. SMITH: "5-day."

MR. STEIN: "Of 5-day (20°C) BOD."

You don't want the percentage?

MR. SMITH: That is right.

MR. STEIN: "And 50 milligrams per day of suspended solids." Right?

MR. POSTON: "No more than 50."

MR. STEIN: "No more than 50."

MR. WISNIEWSKI: You have the "no more than" in the beginning.

MR. STEIN: All right. I think we are set on this.

DR. JELATIS: Are we going to leave "a" and "b," but just call out specifically 50 milligrams per liter in each case?

MR. STEIN: Yes.

MR. HOLMER: In each case?

MR. STEIN: In each case. That is what I tried to get to. It modifies each one.

MR. SMITH: Yes.

MR. STEIN: All right. If this is agreeable, I want to be sure we have the wording. I think we do.

Does anyone have any doubt about that? Do you want it re-read?

MR. MUEGGE: Mr. Stein, there is still a question about the continuous disinfection.

MR. STEIN: Let's see if I can simplify this.

Is there any objection to this formulation on "a" and "b"? Let's get that out of the way. Are we in agreement on that?

MR. SMITH: Yes.

MR. STEIN: Fine. All right, we are in agreement on that.

Now, Mr. Muegge raises the question of "plus continuous disinfection of the effluent."

As I read that statement, that means year- round. If you want that open, we will be glad to discuss it.

MR. MUEGGE: May I call attention to Item "d"?

DR. ODEGARD: Why is it year- round?

MR. STEIN: Didn't your proposal say "continuous disinfection," Mr. Muegge?

MR. MUEGGE: Yes.

MR. STEIN: If you don't mean year- round and this is the proposal, let's bring this up, because that means year- round to me.

Let me try this. I think we are almost over the hump on this item.

However, let's take a ten-minute recess and try to come up with a proposal on the disinfection.

(Whereupon a recess was had.)

MR. STEIN: May we reconvene?

Have we gotten at this disinfection business? Minnesota, do you have any views on that disinfection problem?

MR. SMITH: The only question is the desirability or the necessity for chlorination during the winter months.

I would like to ask Mr. Printz the uses that he feels are made during the wintertime.

MR. PRINTZ: The year- round disinfection was inserted, Mr. Smith, because of the year- round times, except for limited body contact.

MR. POSTON: There are also water supplies concerned?

MR. PRINTZ: Very definitely. If we exclude it, we have to change our wording, because Minnesota, I believe, under State regulations is required to have year- round disinfection to protect the water supply in Minneapolis.

MR. SMITH: We have no quarrel with that. We are questioning some of the uses in the lower sections.

MR. PRINTZ: We have indicated why we were interested in it, and I know that in the Minnesota presentation you agreed wholeheartedly, and the Commission had adopted this as a standard operating practice of year-round disinfection, in your prepared statement.

MR. SMITH: Where applicable. I am not sure that the statement wholeheartedly did.

MR. STEIN: Do we have any views on this?

Again, do we want to let this stand, or do we have any suggested changes in the wording? How do you want to do that?

MR. POSTON: I like the way Mr. Muegge stated it. It seemed pretty clear to me, that statement that he wanted continuous disinfection.

MR. STEIN: All right. Again, as I said, this means all year round to me, and I think it is going to mean that to anyone who reads it.

Is there any further comment?

DR. HARGRAVES: Well, the question about constant chlorination, particularly in the one stretch of the river that at the present time we are not able to use very much, raises a question.

It may sound odd coming from a physician, but I really don't think that chlorination from South St. Paul and from the Twin Cities -- when the ice is on the river there is only one area there where there is some barging done by a gravel company, and the rest of it is under ice until you get down perhaps to Red Wing. From that time there is a considerable loss of bacteria, and the exposure there might be to fishermen and to commercial fishermen.

Now, the cost estimate of the Sanitary District is that it would cost $1,000 a day to chlorinate under the ice, and it would cost South St. Paul I don't know how much. That is a considerable amount of money when the water is practically not being used.

My feeling -- and I think most bacteriologists would agree -- is that most of these bacteria are not going to present much of a hazard when one gets down to Lake City and below Red Wing, where most of the ice fishing is done, and where most of the commercial fishing is done.

These commercial fishermen have been exposed to these bacteria most of their lives, and I think we all forget that we develop immunity or we would all have been dead a long time ago, so that what contact one gets with some of these bacteria I don't think amounts to very much. Even the ice fishermen for a large part have contributed their own pollution through the holes in the ice, more than may be coming from a good many miles upstream.

I would be all in favor of chlorination during the recreational season, or even during the boating season, when the river is open, but it seems to me one could certainly question whether industry should be penalized that amount, say, $300,000 a year, for chlorination for water that is ice-covered and not much of a hazard.

MR. STEIN: Dr. Hargraves, as I understand your statement, we probably could meet what you are saying by saying "plus continuous disinfection of the effluent from at least May through October."

DR. HARGRAVES: That is correct. I am much more worried about the youngsters and the young people who have not had the years to develop immunity getting into the water entirely and being exposed. I don't think this happens in the wintertime.

MR. STEIN: How does Wisconsin feel about it?

MR. MUEGGE: Mr. Chairman, I would like to ask Dr. Hargraves whether there isn't more resistance to destruction of the bacteria in the wintertime than there is in the summertime?

DR. HARGRAVES: Well, I am not a bacteriologist, but under these temperature conditions these bacteria, many of them I admit go into spore forms, or else they don't divide. They are quite inactive at that time. I don't think they present much of a hazard.

MR. MUEGGE: Does the survey give us any data on that?

MR. STEIN: What do you think?

MR. PRINTZ: On the resistance?

MR. MUEGGE: On the relative numbers in the summer as compared to under ice conditions.

MR. PRINTZ: Yes, I believe it gives us information on the relative numbers. I don't know that it is looked upon as interpreting it in the light in which you are suggesting, however.

MR. STEIN: Mr. Muegge, we don't have the experts here, and if you want to get into this, this may be a controversial proposition. As I recall, our bacteriologists, including the late Harold Clark, have contended that the bacteria have a longer period of virulent life during cold weather and they are carried farther in the stream. If you come into contact with them, they are apt to present a danger.

I know the Doctor has some points, and I think his points are well taken. I can appreciate this from a personal point of view.

When you talk in terms of immunity, I know I grew up in New York City and the kids used to swim in rivers like the East River, the Gowanus Canal, and Jamaica Bay, that no self-respecting adult would go near. I didn't seem to get ill, and I still don't get ill when I go up and fool around in those waters. Yet, when I have been in other places like the Missouri River and get into the waters, I get what the Mexicans call "la tourista." This is a hazard of the business.

I am not sure that this immunity isn't just related to the bugs of your youth rather than any place you go around, so this can be rather complicated.

Now let me read this and see if it is something we can all agree on.

> "All municipalities and other institutions discharging sewage into the rivers under investigation provide at least secondary biological treatment, plus effective continuous disinfection of the effluent from at least May through October."

We understand this in connection with the last phrase in this recommendation, that "These limits are to be followed except where more stringent ones are given in the specific recommendations or are required by State Water Pollution Control agencies."

What I am trying to do is get a formulation that we all can agree to. Can we all agree to that recommendation?

Mr. Poston?

MR. POSTON: I would like to make a couple of comments.

As to the first one, with regard to what Mr. Muegge said, nobody knows any better than the people in Minnesota how the life of the organism persists to a greater extent in cold water than it does in hot water.

Back in 1936, there was a school here at the University, and they were making elaborate studies of their water system, where typhoid organisms persisted through chlorination and caused cases of typhoid. Extensive investigations were made at that time to follow these particular cases and the cause, and I think it is very clear that in cold water pathogenic organisms -- some of them at least -- will persist much longer.

Relative to the timing here, I think probably instead of May through October, I would like that consideration be given to this boating season or navigation season. There are some times when we use this stretch of the river beyond October for navigation.

DR. HARGRAVES: How about "ice-covered" then? I mean, limit it to ice cover.

MR. WILSON: Mr. Chairman, that was the suggestion that I was about to make.

I discussed this with Mr. Smith and Dr. Hargraves about substituting the requirement for chlorination during the season when the receiving waters are not ice-covered.

From the standpoint of what Mr. Poston said, it seems to me that the really controlling factor here is not the survival of the bacteria in the water, but the danger of exposure to human beings.

MR. STEIN: Let me ask you: What do you mean, Mr. Wilson, by "ice cover"? It can be ice-covered and have a thin sheet of ice, and yet the boats can go through.

I appreciate what you are getting at, but how long does the contact season last in the waters we are dealing with?

MR. WILSON: The pleasure boat season practically stops as soon as the river is frozen over. The only boats that continue after that may be some lake commercial navigation boats that have a capacity for breaking the ice. They sometimes send an ice-breaker up to break the ice through the channel to the docks to permit some lake boats to land their loads. By that time, the pleasure boating is at a complete stand-still.

I am sure that there would be adequate protection if the chlorination were required at all times when the waters are not ice-covered. When it gets cold enough to freeze the river, after that or before the melting of the ice in the spring, there just simply won't be any pleasure boating.

MR. STEIN: Is this agreeable?

MR. POSTON: You are trying to protect a particular use here, and the use that we are talking about is navigation in addition to the swimming.

MR. STEIN: Yes. We are trying to get a formulation here.

We have two proposals, one from May through October, and the second when the waters are not ice-covered.

Now, either one I think will come close to the purpose. I suggest we consider those and see if we can arrive at a determination. If you would prefer when the waters are not ice-covered, this is all right, or from May through October.

What do you think?

MR. WISNIEWSKI: I think we should set a time interval by naming the months.

MR. STEIN: Yes. Is this agreeable with Minnesota?

MR. SMITH: Yes.

MR. STEIN: All right. From at least May through October. Is this all right?

MR. WISNIEWSKI: I did not necessarily insist on May through October.

MR. STEIN: I know.

MR. WISNIEWSKI: If they wanted to stretch it out, they could do it.

MR. POSTON: How about April through November? That is my recommendation.

MR. STEIN: What do you think, Dr. Hargraves?

DR. HARGRAVES: Well, you have a point there. There certainly is going to be limited contact with the water.

Speaking as an old duck hunter and a fisherman, the duck hunters are going to be out until the season is over, and they are going to be in their boats and sitting on the muskrat houses, and there is going to be limited contact. In the spring, Wisconsin now has an open season all the year round, so they are going to be fishing over there, and, I presume, wherever there is open water. Ours used to be April 15th, but I don't know what it is at the moment.

MR. STEIN: Are we in agreement then from April through November? If we are and there is no objection, let me try to read all of No. 3. As I say, I think this is probably the most difficult one.

"All municipalities and other institutions discharging sewage to the rivers" --

technically, shouldn't that be "waters"?

MR. POSTON: That would be good.

MR. STEIN: That is just a technical change. "To the waters under investigation" -- that should be "covered by the conference."

> "To the waters covered by the conference, provide at least secondary biological treatment, plus effective continuous disinfection of the effluents from at least April through November. This treatment is to produce an effluent which shall not exceed:
>
> "a. 50 milligrams per liter of 5-day (20°C) BOD.

"b. 50 milligrams per liter of suspended solids.

c. 5,000 coliform per 100 milliliters (except where 'd' applies.)

d. 1,000 coliform per 100 milliliters between May and October, inclusive, where receiving waters are used for whole body contact activities.

"These limits are to be followed except where more stringent ones are given in the specific recommendations or are required by State water pollution control agencies."

MR. MUEGGE: Chairman Stein, although I still object to the use of effluent standards, we have been asked to develop water quality standards by the Federal Water Pollution Control Administration and by the laws of the United States, and I will pass that up.

However, I would like to change the opening paragraph and put a period after "biological treatment," and also "continuous disinfection," etc.

MR. STEIN: How would you like to start the second one, "and also"?

MR. MUEGGE: Instead of "plus," "also."

MR. STEIN: All right.

MR. MUEGGE: I think they ought to operate the secondary plants in the wintertime.

MR. STEIN: Is that change agreeable?

MR. SMITH: Yes.

MR. STEIN: All right, we will do that. We will put a period there and an "also" instead of the "plus."

MR. HOLMER: You don't have a verb in there. Make it "also continuous disinfection of the effluent shall be provided."

MR. STEIN: "Shall be provided," yes. All right. Does that clear this up? Are we past that?

(No response.)

MR. STEIN: May we go on to No. 4?

MR. PRINTZ: There was an agreement on No. 4 as it was reported in the Summary Report, and it reads as follows:

> "4. It is recommended that municipal waste treatment plants maintain at least the minimum laboratory control and records as recommended by the Conference of State Sanitary Engineers at their 38th Annual Meeting in 1963 (See Appendix). In addition, all plants should maintain a record of chlorine feed rates and those plants of 2 million gallons/day capacity, or greater, should provide analyses for total and fecal coliforms on a once per week basis. Results of laboratory tests and other pertinent records should be summarized monthly

"and submitted to the appropriate State agency for review and evaluation. These records are to be maintained in open files of the State agency for use by all persons with a legitimate interest."

MR. STEIN: Are there any comments on No. 4? Does this apply just to municipal waste treatment plants?

MR. SMITH: There is another one similar to this. No. 12 is comparable.

MR. MUEGGE: That called for fecal coliform at the last session as an indicator of pollution. I wonder whether we require it here.

MR. STEIN: What about this fecal coliform?

DR. HARGRAVES: Could I ask a question of the Federal men as to how reliable now our study is that identifies fecal coliform from the multiplicity of coliforms that wash off the fields and trees?

MR. STEIN: Let me, as a non-expert, answer what I have heard from our people.

We are supposed to have a discriminatory test which will distinguish fecal coliform coming out of a recently killed animal in a packing plant or human coliforms. As a matter of fact, the tests now can distinguish between human fecal coliforms and the usual warm-blooded animal fecal coliforms.

In addition to this, I do know -- and this is the definitiveness of the discrimination in the test -- and this experience I can attest to as a lawyer -- that the laboratories in checking fecal coliforms, if you split a sample, can more nearly come up with results that fit in with each other than they can with the usual coliform tests, where they have the dilution, look at the size of the colony, make an estimate and begin multiplying. Sometimes we get a wide disparity there, much wider than we have had in checking different laboratories in fecal coliform tests.

Again, our scientists tell us that they are pretty discriminatory. As a matter of fact, the fecal coliform tests, as far as I know, have moved so far along that they have been proposed in the Standard Methods and are being carried in there as a tentative test until they check out.

By the time something gets into the Standard Methods, it is pretty well worked over.

DR. HARGRAVES: I just asked, because the last time the bacteriologist who was working on it appeared before our Commission, he was not quite sure and he would not say that he could positively do it. That was a couple of years ago in, I think it was, the Mississippi hearings; but if it is done, why, I am satisfied.

MR. STEIN: If I am wrong on this, you can correct me.

DR. HARGRAVES: I am just trying to catch up. That's all.

MR. STEIN: I am asking the scientists.

MR. PRINTZ: I think you are right.

There is one other reason too for which this is included, and this is in connection with what is anticipated out of the recreation and the aquatic technical group. Recommendations will be coming out for water quality concerning these uses, and I think they will be recommending that we go to something besides total coliform, which will be fecal coliform.

MR. STEIN: Doctor, I would like to give you the reason I went into this, which was because, like Mr. Wilson, I never liked to put anything out that we can't put on the stand and have withstand the most vigorous cross examination. Otherwise, the tests, at least to us lawyers, are not much good.

I have been through this very carefully on the fecal coliform, and I have been assured that this is so. We have had the experts up and it has withstood cross examination several times.

Are there any questions on No. 4?

(No response.)

MR. STEIN: If Paragraph 4 is acceptable and there are no objections, we will adopt it and proceed to No. 5.

MR. PRINTZ: No. 5 also received no objections from the technical session. It reads as follows:

> "5. It is recommended that new waste treatment facilities be designed to provide adequate capacity of individual units and components as well as maximum flexibility in order to permit later modification in operating procedures so as to effect the greatest amount of phosphate removal. Existing plant facilities should be operated so as to optimize phosphate removal."

MR. STEIN: Any questions?

DR. ODEGARD: I am posing a chemical question. What about adding nitrates in there in this comment about the future?

MR. STEIN: Mr. Printz, do you want to talk about that?

MR. PRINTZ: We feel that the phosphates are the more important problem, and if we can take care of the phosphates, in all likelihood we will take care of the nitrates as well.

Mr. Hall might like to add to that, being more well versed after working with the criteria.

MR. STEIN: Do you want to do that?

As I understand it, the problem is this: We are dealing largely here with a weed or an algal growth. We are dealing with phosphates and nitrates being essential to life. The theory that these biologists have is if we take away one of those essential elements, you are going to cut down the obnoxious algal or weed growth.

Again, as I understand this, nitrates are ubiquitous. Try to keep them out. If you keep them out of the sewers, they are going to get in from the air, and so forth, so they feel the critical key element of control is to eliminate the phosphates and keep them out, because their notion is, supposing you do eliminate the nitrates from the sewers. If you put enough of the other essential elements in, there is going to be enough of the nitrates generally around the environment to stimulate and kick off the growth anyway, so that is why they concentrate, as I understand it, on phosphates.

Let me go off the record.

(Discussion off the record.)

MR. STEIN: Let's go back on the record.

Do we have any information on the percentage of phosphates which come from treatment plants in the area under consideration here, and the percentage of phosphates which come from land runoff?

MR. PRINTZ: I believe we do, sir. However, it was not introduced or made in connection with these recommendations, since there are no specific recommendations being made for phosphate removal at this time.

MR. STEIN: Do you have a chart? Why don't you refresh your memory on that?

MR. POSTON: That is on Table 3.

MR. PRINTZ: As an example of the type of data collected by the Project, on Roman Numeral V-42 of the record on Findings, you will find a predicted nutrient profile for the summer low flow of the Minnesota River. This is taking into account it coming from natural areas as well as others.

MR. STEIN: Do you have an estimated figure?

MR. PRINTZ: Percentagewise, such as you were speaking of?

MR. STEIN: Yes.

MR. PRINTZ: I don't believe so.

MR. STEIN: All right. What do you want to do about this Recommendation No. 5? Do you want to accept it or modify it in any way?

MR. MUEGGE: I think we need further information.

MR. STEIN: What is your proposal on that, Mr. Muegge?

The Technical Committee, as I understand it, representing Wisconsin, Minnesota and the Federal people, have recommended that we accept this, and it is your move from Wisconsin to strike this or modify it in any way.

MR. PRINTZ: Mr. Chairman, this was further modified, I believe, at the beginning of this session by Minnesota by inclusion of the additional statement in the general discussion, was it not?

MR. STEIN: I recognize all the problems you have with this. I have the same problems.

These are physical facts. If anyone feels they don't have these problems, I think they are overstating the case, but the question here before us is whether we should make any modifications to Proposal No. 5, or adopt it for the conferees.

How do you feel about it?

MR. MUEGGE: If we put anything in, I think we should say "nutrients" rather than "phosphates."

DR. JELATIS: Mr. Chairman, I think this is covered adequately, as far as the general recommendation goes, by the proposal of Mr. Smith earlier in the general recommendations.

I will read this sentence:

> "The installation of specialized treatment facilities designed to reduce nitrogen and phosphorus compounds in the waste effluents will be recommended when satisfactory methods are feasible or available."

MR. STEIN: In other words, you think that takes care of this and we can eliminate this?

MR. POSTON: No. I think we can just leave it as it is.

DR. JELATIS: Just leave it as it is.

MR. STEIN: What do you want to do with No. 5 that is before us? Do you want to leave it in or strike it?

MR. POSTON: I propose we just leave it there.

MR. MUEGGE: I think we should make it "nutrients," though.

MR. STEIN: I would like to get a consensus here and move on. How do you feel about No. 5?

MR. HOLMER: Why don't you just leave it out?

MR. MUEGGE: Either leave it out or put in the word "nutrients" instead of "phosphates."

MR. STEIN: Do you want to put in "nutrients" instead of "phosphates," because you said "phosphorus and nitrogen"? How about that for No. 5? Let's strike phosphate and make it "nutrient" in the places where it appears in that paragraph. All right.

May we move on to No. 6 then?

MR. MUEGGE: One further question with regard to No. 5. Does that apply to municipal plants only, or to both municipal and industrial waste plants?

MR. STEIN: Both, I understand.

Are there any further questions or objections on

No. 5?

(No response.)

MR. STEIN: If not, can we move to No. 6?

Mr. Printz?

MR. PRINTZ: No. 6 has a minor modification to conform with what I indicated in the last session of the record would be done. It reads as follows:

> "6. It is recommended that the States of Minnesota and Wisconsin establish a program of monitoring and surveillance in area waters for evaluating progress in improvement of stream quality resulting from implementation of actions recommended by the Conferees. The FWPCA should establish monitoring stations where appropriate within the study area to aid in the evaluation. Water quality surveillance activities should be coordinated and all information made available to the States, the FWPCA, and other parties with a legitimate interest."

The only change made here is so that monitoring stations put in by the Federal Government would not be restricted to Minnesota waters or to the State of Minnesota. It would give them equal recognition in the two States.

MR. STEIN: Do you want to take a technical change and make that "water quality" instead of "stream quality"?

DR. HARGRAVES: Would it be more specific to say "the Federal Water Pollution Control Administration should establish monitoring stations where appropriate on portions of the Mississippi, Minnesota and St. Croix"?

MR. PRINTZ: We are staying within the study area, and that is included.

MR. STEIN: Is there agreement with that?

(No response.)

MR. STEIN: If there is no disagreement, let's go on to No. 7.

MR. PRINTZ: No. 7 received no change by the Technical Committee, and it reads as follows:

> "7. It is recommended that all present and future sewerage and sewage treatment facilities be modified or designed and operated to eliminate bypassing of untreated wastes during normal maintenance and renovation operations. The appropriate State agency (Minnesota Water Pollution Control Commission or Wisconsin Department of Resource Development) is to be contacted for approval prior to any expected bypassing of waste. All accidental or emergency bypassing or spillage should be reported immediately."

DR. JELATIS: Mr. Chairman?

MR. STEIN: Yes.

DR. JELATIS: I think there is an inconsistency in this. The first sentence states the plants shall be designed and operated to eliminate bypassing of untreated wastes. The next sentence says that the appropriate State agency is to be contacted for approval prior to any expected bypassing of waste.

Can we correct this by just saying, instead of "eliminate," "minimize," because I think it is understood that there are times when bypassing of wastes has to be performed in order to do some maintenance in plants in which there is a complete parallel plant?

MR. STEIN: Let's see what these people say.

MR. WISNIEWSKI: Mr. Chairman, it is conceivable that a plant can be built with a bypass, but there is no reason why somebody can't stick a hose in the pump and pump it up.

MR. STEIN: But let's take this: Do you want to leave this "eliminate"?

MR. WISNIEWSKI: I don't think the State agency should be in the position of approving bypassing. It is placed in a position of being contacted for review and advice with reference to bypassing.

MR. STEIN: Let me get off the record.

(Discussion off the record.)

MR. STEIN: Let's go back on the record.

Do you want to leave this this way, or change it?

MR. SMITH: Also, aren't we talking about interceptor sewers as well as treatment plants, Mr. Wisniewski?

DR. JELATIS: It mentions sewerage and sewage treatment facilities.

MR. STEIN: Yes.

MR. SMITH: In which case I would tend to go along with the Mayor, that this be made "minimize" instead of "eliminate."

MR. STEIN: Let's take "minimize." Is this all right? Do you have any problem with this, Mr. Poston?

MR. POSTON: Unless it is very desirable to have "eliminate," I will go along with "minimize."

MR. STEIN: We have changed "eliminate" to "minimize."

MR. HOLMER: I think Mr. Printz is making a point that we perhaps ought to consider.

The elimination refers to normal maintenance of renovation operations. I wonder if that weakens it enough here, "eliminate"?

MR. PRINTZ: Mr. Chairman, that was specifically written in.

MR. MUEGGE: I think you should just make it "minimize bypassing of untreated wastes," period, and that would cover the renovation period and all other periods.

MR. STEIN: Is that all right? "Minimize bypassing of untreated wastes," and strike the rest of the sentence. Is that all right?

DR. ODEGARD: That would weaken it.

DR. HARGRAVES: No. This completely changes the whole substance.

My question would be: Can you run a plant indefinitely 365 days out of the year without either bypassing or providing some storage area?

MR. STEIN: Maybe you can, but I don't know any plant that has done it.

DR. HARGRAVES: I say if you leave that out, then during normal --

MR. STEIN: He wants to change that to "minimize," "minimize bypassing of untreated wastes," period.

DR. HARGRAVES: They just said period, "bypassing of untreated wastes," period.

MR. STEIN: Yes.

MR. MUEGGE: Dr. Hargraves, in my estimation that would include normal maintenance and renovation operations.

DR. HARGRAVES: That is for you lawyers to say. Will that stand up in court?

MR. WILSON: Mr. Chairman, I concur with Dr. Hargraves' suggestion.

From a legal standpoint, I think you are on safer ground to rest with that proposal to "minimize bypassing of untreated wastes," period.

MR. STEIN: All right. If that is agreeable and there is no objection, let's go on to No. 8.

MR. PRINTZ: Are you ready for No. 8?

MR. STEIN: Yes.

MR. WISNIEWSKI: I would like to offer a suggestion on the next sentence, that "the appropriate State agency is to be contacted for review and advice prior to any expected bypassing of waste." We know of situations where it may be possible to avoid bypassing through certain practices without interfering with an operation.

MR. STEIN: Do you want to change that to "is to be contacted for review and advice," instead of "for approval"?

MR. HOLMER: That is what we are worrying about, what the penalties would be.

MR. STEIN: To strike "be contacted for approval" and make it "for review and advice."

MR. WILSON: Well, I think that should be the more desirable practice.

MR. STEIN: Is that agreeable?

DR. HARGRAVES: Yes.

MR. STEIN: All right. Are there any other comments on this?

Can we change that "should" in the last sentence to "are to be"? Is that agreeable? Do you want to buy "shall"?

MR. SMITH: "Shall."

MR. STEIN: "Shall." All right. That will read, "All accidental or emergency bypassing or spillage shall be reported immediately."

May we go on to No. 8?

MR. PRINTZ: No. 8 received a minimum change with the addition of two words to satisfy the Minnesota agency, and it now reads as follows:

> "8. Wastes (such as sludge from the St. Paul water treatment plant) which discharge into a municipal sewerage system be pretreated where necessary to avoid any detrimental effect on waste treatment operation."

The words "where necessary" were added.

MR. STEIN: If there is no objection, we will move on to No. 9.

MR. PRINTZ: No. 9 also received no changes. It reads as follows:

> "9. Programs be developed by those responsible for the facilities to prevent or minimize the adverse effect of accidental spills of oils, gases, fuels, and other material capable of causing pollution. The elements of such programs should

"include:

"a. Engineering works such as catchment areas, relief vessels, and dikes to trap spillage.

b. Removal of all spilled materials in a manner accpetable to the regulatory agencies.

c. Immediate reporting (by those responsible for the facilities) of any spills to the appropriate State agency.

d. In-plant surveys and programs to prevent accidental spills."

MR. STEIN: Is there any question on No. 9 one way or the other?

MR. SMITH: We should like to comment on the fact that the Commission does not have the explicit authority to comply with all of these recommendations.

However, legislation has been supported or at least recommended for this.

MR. STEIN: That will be noted.

If there is no objection to anything in No. 9, we will proceed to No. 10.

DR. HARGRAVES: What about this matter of "removal of all spilled materials in a manner acceptable to the regulatory agencies"? Just above it, of course, it says "engineering works," and then goes on to say "relief vessels."

We are, of course, quite self-conscious of the oil spillage of a few years ago that precipitated all this. Now, this was no doing of ours, and we had no right to get into it because it wasn't a menace to public health. This was another department of government.

But who is going to supply the relief vessels and the other equipment to retrieve this once it gets into the water, which is our premise?

MR. PRINTZ: The wording was written in, Dr. Hargraves, "be developed by those responsible for the facilities."

DR. HARGRAVES: You mean the oil distilleries, and so on, should have vessels and other things ready to do this? Is this your intent?

We already have them diked, of course. We have our laws and we have our regulations, that all of these are diked, and the chances of spillage, I hope, have been minimized to a point where it won't happen.

If it does happen, one would have to be supplied with a good many thousand dollars worth of equipment that is almost never used.

MR. POSTON: My understanding of this was to reenforce your law.

DR. HARGRAVES: Well, we are pleased to have it reenforced. It is being enforced, I know, but you are thinking along the lines of the removal of all spilled material, and this would be within the dikes or would be on the land or on the road. We hope we have some control there, because we have all the transportation and other things in which there are accidents, but it raises what would be a very sticky question, if we had another oil spill from some accident at 30 below zero, as it happened unhappily here.

MR. STEIN: Well, I think that it is modified by "those responsible for the facilities." It has to be presumably on their land.

Now, the Oil Pollution Act of 1924 -- I don't know how good it is now because of various amendments, but they have grappled with this problem for many years. This was under the jurisdiction of the Corps of Engineers, so we can take no credit for its development, but I think they have met this problem, Doctor, and have come up with what seems to me a fairly workable solution.

That is, if you get an oil spill over which we have no jurisdiction, then you ask those responsible to correct the spill. The likelihood is if it gets in the waters, they are not going to have the equipment nor the facilities to do it. If they don't have it, then we are supposed to make arrangements to correct that spill, and then we present the offender with a bill. If he does not pay the bill we go to court to collect.

However, I think in the Corps of Engineers, in dealing with the Oil Pollution Control Act since 1924, this has evolved as the most reasonable and sensible method of dealing with the problem.

What it really boils down to is, except where you have a ship contributing to oil pollution because it sank, and you have a large shipping concern that can throw a tow line and pull it away and do it itself, the Federal Government has to step in and use its own facilities, and then try and collect.

DR. HARGRAVES: So the moral is to build far enough back from the banks so that you catch it in the entrapment.

MR. STEIN: Yes, sir.

Are there any further comments or questions on No. 9?

(No response.)

MR. STEIN: If not, may we move to No. 10?

MR. PRINTZ: No. 10 received no suggested changes from the Technical Committee, and it reads as follows:

> "10. It is recommended that combined storm and sanitary sewers be prohibited in all newly developed areas and be eliminated in existing areas wherever opportunity to do so is afforded by redevelopment. Present combined sewers should be continuously patrolled and operated so as to convey

"the maximum amount of combined flows to and through the waste treatment plant. In addition, studies to develop effective control of wastes from this source should be continued by the MSSD and should be initiated by the City of South St. Paul. Although the immediate problem is a bacterial one, both studies should also consider the discharge of BOD and solids. Methods to be used to control wastes from combined sewers and a time schedule for their accomplishment should be reported to the Conference within two years after issuance of the Conference Summary."

MR. STEIN: There was no significance to your eliminating the word "possible" after "maximum" in the fourth line, when you read it, was there?

MR. PRINTZ: No, sir. That was an error, if it was eliminated.

MR. STEIN: All right. Are there any comments or questions?

DR. ODEGARD: Mr. Chairman, I have a question about the redevelopment. This could be interpreted to mean merely when an area had been cleared of all buildings in a real clearance project and then rebuilt, and I wonder if there isn't some in-between area where there should be an urging of communities to consider investing in --

MR. STEIN: I will tell you what we did in Washington, D. C. I don't hold that up as a model, but I think we are proceeding with the separation problem.

We separate the sewers whenever there is a redevelopment area, and they also have a plan whereby, whenever they rip up a street for a variety of purposes -- that is, electrical work or repaving or taking up tracks -- and they get down there and separate and try to put in a separation in that area of the city, the program is broader than the redevelopment program there.

I don't know whether you people want to adopt that or not, but that may be a suggestion. What do you think?

MR. MUEGGE: I think in addition to "afforded by redevelopment" we should add "or as otherwise reasonably feasible."

MR. STEIN: All right, "or as otherwise reasonably feasible."

With that amendment and modification, is No. 10 acceptable?

DR. ODEGARD: In addition, further below, where it recommends local study, I think it could be recommended that the localities should study setting up a program for conversion.

MR. STEIN: Where is that?

DR. ODEGARD: That is the third sentence down there:

"In addition, studies to develop effective control of wastes from this source," and so forth.

MR. STEIN: Yes. How would you suggest changing this?

DR. ODEGARD: "Studies to develop effective control of wastes from this source and to eliminate combined sewers."

MR. STEIN: "From this source and to eliminate combined sewers," after the word "source"?

DR. ODEGARD: Yes.

MR. STEIN: Is that agreeable?

MR. MUEGGE: Chairman Stein, can't we follow the practice of requiring separation or treatment of all the wastes that are tributary to the sewage system, and in case they decide to separate the rain water from the combined sewers, we require that they submit the program. I think that probably should be incorporated.

MR. POSTON: It seems to me what we have asked for here is a study to develop effective control of wastes from combined sewers, and whether we do this by separation or by treatment of the total waste or some new method, I think is more or less immaterial, as long as we solve the problem.

I think that the expense involved with separation of sewers in a metropolitan area has been questioned considerably, and it is felt that perhaps we will do this with some other procedure than separation, because there is a need to treat the wastes from separate sewers, or storm sewers, as well as there is the need to treat the wastes from combined sewers.

MR. MUEGGE: I assume, Mr. Poston, from your statement that the only communities involved in the study area are the Minneapolis Sanitary District and the City of South St. Paul.

MR. STEIN: Do you have any specific language to suggest to do that?

MR. MUEGGE: Yes. "In addition, studies to develop," which is your third sentence --

MR. STEIN: Yes. The proposal that I have now is, "In addition, studies to develop effective control of wastes from this source and to eliminate combined sewers should be continued."

Do you want that phrase added, "and to eliminate combined sewers" in there?

MR. WILSON: Mr. Chairman, I would like to point out, in the first place, that such studies have been going on for quite a while, and very substantial progress has been made under the existing programs, in the actual elimination of combined sewers in both cities, but this is a situation where the proof of the pudding is in the eating thereof, or, I might say that this program is related to the ultimate capacity of this Twin Cities sewage system. If the same result in actual effect on the receiving waters, let us say, could be accomplished more cheaply by some other method, then certainly there should be no limitation of activity for the elimination of combined sewers.

Now, under this proposed language, that would not result, because I thought that was a reasonable suggestion of Mr. Muegge's, to insert "or as otherwise reasonably feasible," after the word "redevelopment," and then this other proposal that studies to develop these matters should be continued, I don't see any objection to that either.

The only objection could be, as I said, the implication that this is the only method of accomplishing a desired result, and the effect on the receiving waters, and certainly the door should be left open for getting at other methods for getting the same results.

MR. MUEGGE: My recommendation is that we approve Recommendation No. 10, provided that the Sanitary District and the City of South St. Paul are the only ones that have combined sewers.

MR. STEIN: Is that correct?

MR. SMITH: No, this is not correct. Minneapolis and St. Paul also have.

MR. MUEGGE: Aren't they part of the Sanitary District?

MR. SMITH: No.

MR. STEIN: Does this cover them all?

MR. SMITH: This probably should be broadened out. Some of the sewers in Red Wing are combined.

MR. MUEGGE: Couldn't we do that by just using "the City of Red Wing"?

MR. SMITH: I think it should be broadened.

MR. STEIN: Can we say, "In addition, studies to develop control of wastes from this source should be continued or initiated by the localities involved"?

MR. SMITH: Yes.

DR. JELATIS: Yes.

MR. STEIN: All right.

MR. POSTON: Read that once more, please.

MR. STEIN: "In addition, studies to develop effective control of wastes from this source should be continued or initiated by the localities involved."

I don't want to eliminate the amendment down there. Do you want that phrase, "from this source and to eliminate combined sewers" in there, or don't you want it?

MR. SMITH: Leave it in.

MR. STEIN: All right. It reads:

> "In addition, studies to develop effective control of wastes from this source and to eliminate combined sewers should be continued or initiated by the localities involved."

With that, if there are no further objections or questions on that point, we will go to No. 11.

Mr. Printz?

MR. PRINTZ: The Federal conferee recommends that No. 11 read as follows:

> "11. It is recommended that all industries discharging wastes to the waters within the conference area provide treatment at least equivalent to that recommended for municipalities. In no case shall the settleable solids concentration exceed 5 ml/l. Limits on coliform densities in the effluent will be the same as for municipalities unless it can be demonstrated that pathogens are absent from the treated effluent. The selection of the industries which may be subject to this variance and the performance of the investigation to determine such variance will be a joint effort between the FWPCA and the appropriate State agency."

MR. STEIN: Are there any questions or comments? I guess you did not get agreement on this one?

MR. SMITH: We would like to suggest that the third word be changed from "discharging" to "contributing," since, in the case of river water use for cooling purposes, that would be covered.

MR. STEIN: Do you agree with that change to "contributing"? If there is no objection to that, let's change that.

MR. MUEGGE: I would like to go back to No. 5, in view of that, and have inserted the word "municipal," so that it will read "new municipal waste treatment plants."

MR. SMITH: No. 5?

MR. MUEGGE: No. 5.

MR. STEIN: Do you want that? Is there any objection?

MR. POSTON: What would that do?

MR. MUEGGE: Well, it puts new systems under the same control as you probably are exercising for municipal treatment systems.

MR. STEIN: Let me get this. You prefer this to be at least equivalent to that recommended for municipalities, and he wants to refer back to No. 5 to make that new municipal waste treatment facilities, so that you have something to refer back to?

MR. WISNIEWSKI: Right.

DR. JELATIS: No. 5 refers to nutrient removal. Is that the intent?

MR. SMITH: I think what No. 11 refers to is No. 5.

MR. MUEGGE: No. You have No. 4, in which you talk about municipal waste treatment plants, and then I asked a question earlier whether No. 5 applied to industrial wastes and municipal plants, and you said you had another section.

I don't think No. 11 is all-inclusive. I think you need the word "municipal."

MR. PRINTZ: I believe at that time we were referring to the reporting of the information.

MR. STEIN: No. Here is the point: I think Mr. Muegge is looking for a self-contained document. If we put "municipal" where he suggests under Paragraph 5 and we refer back to it in Paragraph 11, wouldn't this tighten it up? What have you lost?

MR. PRINTZ: Well, by inserting the word "municipal" in No. 5, you are losing the building-in of adequate capacity in industrial waste treatment plants necessary for future operational changes required for nutrient removal.

MR. STEIN: No. You say "all industries contributing wastes to the waters within the conference area provide treatment at least equivalent to that recommended for municipalities." This is what he is getting at.

All right. We will put "municipal" in No. 5, and let's go back.

MR. MUEGGE: I would like to make another change in No. 5 now to make it "optimize phosphate removal."

MR. STEIN: We have done that.

MR. MUEGGE: Have you done that?

MR. STEIN: Yes, we have done it.

All right. Let's get back to No. 11.

MR. MUEGGE: It should be in both places.

MR. STEIN: We have got it, and it is taken care of.

Do we have any problems on No. 11?

(No response.)

MR. STEIN: If we do not have any problems there, we have had a request from Minnesota. They have an arrangement made for lunch.

We will recess for lunch and reconvene at half past one.

(Whereupon, at 12:15 p.m., a luncheon recess was taken.)

AFTERNOON SESSION

(1:30 p.m.)

MR. STEIN: May we reconvene?

I believe Mr. Smith may have a couple of points he wants to bring up.

MR. SMITH: I would like to go back to No. 10, to the second sentence, where the sentence states: "Present combined sewers should be continuously patrolled and operated."

I wonder if the word "monitored" would not be better?

MR. STEIN: Any objection to that? In Paragraph 10, fourth line, first word, strike "patrolled" and substitute in lieu thereof "monitored."

Without objection, that will be done.

MR. SMITH: Then, in No. 11, the one that was just discussed, in the second line it states, "conference area provide treatment." We would like to change that to "provide effluent," so that it would read, "All industries contributing wastes to the waters within the conference area provide effluent at least equivalent to that recommended for municipalities."

MR. STEIN: Is that agreeable?

MR. WISNIEWSKI: You had better check that with No. 5 then.

MR. SMITH: We are not talking about No. 5. We are talking more about No. 3 than we are No. 5.

MR. STEIN: Well, I don't know that there is any real problem.

MR. HOLMER: "Provide effluent standards"?

MR. STEIN: No, "effluents."

MR. SMITH: I am thinking more of No. 3 than I am No. 5.

MR. STEIN: "Provide effluents." They are thinking in terms of a discharge.

MR. SMITH: Right.

MR. STEIN: If there is no objection, that will be done.

Now, we have had an inquiry or two about people other than the conferees making statements. It was announced a week or two ago, when we had the conference, that this session of the conference would be limited to statements by the conferees and the technical staff and members of the panel.

I believe in order to change that kind of thing, we would have to have unanimous consent from among the conferees. I have polled the conferees and I have not found unanimous consent. The conferees believe they have the points of view of all the people here.

My recommendation to any other than the conferees who want to get something brought up here is that they use their persuasiveness with one of the conferees to bring this up at a particular point, but we are not opening this session of the conference to people other than the conferees.

With that, Mr. Printz, will you continue, please?

MR. WISNIEWSKI: Before you go ahead, back on Page 2, the suggestion has been made that instead of merely "review and advice" under No. 7, this be changed to read "is to be contacted for review, advice and its conditional approval."

MR. STEIN: Why do they want "conditional"? Why don't we say review, advice and approval? Is that all right?

That "conditional approval" seems to me, at least, from the Federal point of view, to get into the detail of a State kind of operation. If you want to break your approval into a conditional approval, this is a State privilege, but I think for the Federal Government to talk in terms of that kind of detail in State administration would go beyond what we should do.

MR. HOLMER: I would concur with that, but I would suggest that the word "authorization" while it results in the same action, avoids the business of approving bypassing. In other words, it constitutes approval, we concede.

MR. STEIN: Do you want to say "review, advice and authorization? How about that?

MR. HOLMER: Yes.

MR. MUEGGE: That is better.

MR. SMITH: All right.

MR. WILSON: What change was suggested there?

MR. STEIN: That is No. 7. Where we have "review and advice" we have changed it to "review, advice and authorization."

MR. WILSON: You have added the word "authorization"?

MR. STEIN: "And authorization." Right.

MR. MUEGGE: Chairman Stein, may someone read No. 3 and find out how it reads at the present time?

MR. STEIN: No. 3 reads as follows:

> "All municipalities and other institutions discharging sewage into the waters covered by the conference shall provide at least secondary biological treatment. Also, continuous disinfection of the effluent shall be provided from at least April through November. This treatment is to produce an effluent which will not exceed:
>
> a. 50 mg/1 5-Day (20°C) BOD.
>
> b. 50 mg/1 of suspended solids.
>
> c. 5,000 coliform/100 ml (except where 'd'

applies.)

d. 1,000 coliform/100 ml between May and October, inclusive, where receiving waters are used for whole body contact activities.

"These limits are to be followed except where more stringent ones are given in the specific recommendations or are required by State Water Pollution Control agencies."

MR. MUEGGE: Back to after "secondary biological treatment," wouldn't it read better if we just added "and also continuous disinfection"?

I did want separate sentences, but it must provide the initial secondary treatment and chlorination during the period indicated. Editorially, I think this could be done by the Federal Water Pollution Control Administration.

MR. STEIN: If you want to do that, I think you have a point. We could say, "and also continuous disinfection to handle the effluent from May through November, inclusive,"to coincide with Subparagraph "d" below in the format, if you want to, but I think this is largely an editorial change, Mr. Muegge, and I don't think we are changing the meaning.

Anything you want, I am sure would be agreeable. Does this disturb you the way it is?

MR. MUEGGE: Well, I just wanted to make sure that we are going to have disinfection during that specific period, but in all cases are going to have good secondary treatment.

MR. STEIN: All right. Let's try it this way to get this settled, because I think this is an important point.

Let's say, "at least secondary treatment and also continuous disinfection of the effluent between April and November, inclusive." All right? Does that satisfy you from a literary point of view?

MR. MUEGGE: I think maybe we should go back to splitting it.

MR. STEIN: All right. You proposed that in the first place.

MR. MUEGGE: Yes.

MR. STEIN: We were happy the way it was. You are raising the point.

MR. MUEGGE: I think your Paragraph a and your Paragraph b, though, should be under the secondary treatment, and that the "c" and "d" should preferably be after the disinfection.

MR. HOLMER: Why don't you just say "these treatments are to produce an effluent"?

MR. STEIN: I think, sir, what we are doing is perfecting a draft.

Has anyone any doubt of what this means, or what this says? If we don't, perhaps we have had so much trouble with this and we can put this at rest and go on, because I am sure we can perfect this.

MR. MUEGGE: I think the staff should be able to come up with some good language.

MR. STEIN: The problem that we have on this is that we have a lot of conferees, and it is like a statute. When the conferees are together, you never can produce a draft as good as the staff can do, and the staff can never produce a draft as good as one man can do, but this is a composite.

Now, unless there is a specific amendment to change it, I think what we are doing is dealing with draftsmanship and not meaning.

MR. MUEGGE: Well, I think that is right.

MR. STEIN: And I think the meaning is clear. If anyone has any doubt, I would like him to raise it.

MR. POSTON: Mr. Chairman, while we are on No. 3, I have a lot of feeling about this particular recommendation, in that it seems to me that we have made it possible to get along with less than some of these plants are able to produce, and I would like to put in a sentence preliminary to or right after Paragraph d here, which would say that, "All plants will be maintained and operated to obtain maximum possible efficiency from the plant as it is designed and constructed."

I see some of these possibilities for some of the plants to get by with a lot less than they possibly will if they are not operated and maintained in good manner, and I think 50 parts of BOD and 50 parts of suspended solids will be much higher than ordinarily we would like to see out of these plants.

This has been my concern here, and I think this would help in some small way.

MR. STEIN: Read the sentence again.

MR. POSTON: "All plants will be maintained and operated to obtain the maximum possible efficiency from the plant as designed and constructed."

MR. MUEGGE: Wouldn't that be better after the paragraph below, a, b, c, d, or part of that paragraph?

MR. POSTON: All right. That is where I intended it to be, after Paragraph d.

MR. MUEGGE: After Paragraph d, or after the paragraph following "d"?

MR. STEIN: That would be all right, I think.

MR. POSTON: Yes.

MR. STEIN: I think it might be better as another paragraph after that paragraph if you are going to do it.

Again, we are speaking of draftsmanship. This doesn't follow anything, but it is just another paragraph at the end.

Is that agreeable?

(No response.)

MR. STEIN: If that is agreeable, that will be done.

MR. WILSON: Where are you putting that in?

MR. STEIN: The paragraph right after this one at the end (indicating).

MR. WILSON: Oh, yes.

MR. STEIN: If that is agreeable and if there are no other situations to bring up, Mr. Printz, may we go on?

MR. PRINTZ: Before we begin, Mr. Chairman, I have one point of clarification.

In No. 10, there were some changes in that this was to be applied to all municipalities, and I think the word "localities" is used.

MR. STEIN: Yes.

MR. PRINTZ: In the next sentence, which now reads, "Although the immediate problem is a bacterial one, both studies" remains, and that word "both" should then be edited to read "these studies."

MR. STEIN: Yes, that should be done without objection. I don't think that changes the meaning. All right.

Will you continue, Mr. Printz?

MR. PRINTZ: No. 12 contained no disagreement at the time of the technical discussion. It reads as follows:

"12. It is recommended that industries discharging wastes to the waters maintain operating records containing information on waste discharge rates and concentrations of constituents found in significant quantities in their wastes.

"This information should be summarized and submitted to the appropriate State agency at monthly intervals for review and evaluation. These records are to be maintained in open files of the State agency for use by all persons with a legitimate interest."

MR. STEIN: Is there any objection, comment or question on this? If not, let's go on.

MR. MUEGGE: There may be a legal question, but let's not go into it.

MR. STEIN: We're ahead. Let's go on to 13.

MR. PRINTZ: "13. It is recommended that all watercraft provide treatment for disposal satisfactory to the water pollution control agencies of the respective States. Federally licensed watercraft are to provide treatment satisfactory to the Federal Government."

MR. POSTON: Do you want me to comment?

MR. STEIN: There is a legal question there too.

MR. POSTON: I think we will have difficulty living with this particular statement.

Personally, I like the requirement that they have in Wisconsin. I think we must have uniformity between the two States, particularly on the St. Croix River, where boats are licensed on both sides of the river. It would not be equitable to have a different standard for those registered on one side versus the other side.

In fact, I would question whether we would have any boats registered on the side of the river that had the most demanding treatment requirements for their watercraft.

MR. STEIN: What would you suggest?

MR. HOLMER: Mr. Chairman, I think before the changing of the language, we need to recognize that we are not an interstate compact commission here and we are dealing with the statutes which are not yet adopted in Wisconsin, but are under consideration, and with Minnesota legislation.

About all we can do at this point, it seems to me, is to agree to a recommendation like this in No. 13, and trust to duly authorized agencies, like the Minnesota-Wisconsin Boundary Area Commission, to provide the needed pressures on the respective States to secure uniform legislation.

We recognize this is desirable, but there is nothing this conference can do to achieve that uniformity.

MR. SMITH: I think this is true. Not only that, but I believe the Federal Government has the responsibility where Federally registered craft are concerned. They should control these themselves.

MR. POSTON: According to what standard?

MR. SMITH: This is up to you. If we have standards, there is no reason why the Federal Government can't establish standards.

MR. STEIN: Do you prefer this Paragraph 13 to the original 13?

MR. SMITH: Yes.

DR. HARGRAVES: There was a very good reason for this too, Mr. Stein.

At the present time, disposal systems for boats are of very questionable worth. Many are already purchased and are in boats. This was legislation that was rather hurried, I think, before the industry was ready to supply equipment. There was a scramble to get into the field, and I have many associates who own boats that are most unhappy with the facilities that they have had to pay good money to install.

If we went to holding tanks, which probably is as good as any, we still have to arrange with marinas and towns and other places to dispose of it, so it still may be disposed around the bend into the river again after it has been consolidated.

MR. STEIN: I am sure you are right, Doctor.

Speaking for myself, we have many thousands of dollars invested in trying to perfect these marine facilities, and, as a matter of fact, the enforcement operation paid for a demonstration on all the Coast Guard boats in the Great Lakes in the New York area, trying to get them to work.

I am not sure that if I knew the technical problems I would have gotten into when we authorized enforcement to pick up this contract that it would not have stimulated our research men to take it up instead.

However, I think you are right. We are still feeling our way in this area.

Do you have any objection to this No. 13, or do you have any amendments to it?

MR. POSTON: I think I agree with Dr. Hargraves that they may do some of these things, but I think until somebody lays out some proposed ground rules or shows leadership in ways that this can be handled in a suitable manner, we are not going to make any progress.

DR. HARGRAVES: We have a law. We have five types of equipment that have been approved, if they haven't been recommended.

There is a study going on, as I have been told, at the University of Michigan, to try to resolve this problem and come up with the best equipment possible, and I would anticipate this will then become a standard for most States.

I think we are just ahead of ourselves to try to change it, because we would change thousands of dollars worth of equipment that men have already put in, and they won't have much better to turn to if they are not able to empty their tanks in marinas.

MR. POSTON: Does this mean then that we would have three sets of criteria for the boats to comply with, depending upon the location of their registry?

DR. HARGRAVES: You are not talking particularly about criteria. You are talking here about the type of treatment.

MR. POSTON: Three different types of treatment, depending on where the boat is registered?

DR. HARGRAVES: Yes, until we all know better.

MR. STEIN: I am not sure that that would not be a wise thing, Mr. Poston, to try to experiment with. This is not the easiest kind of operation.

You know we have been in this up to our ears. I am not sure that we have right now any satisfactory on-board treatment for wastes.

Assuming that we did, what would be the effect on landlocked waters if we had, for example, a macerator and a chlorinator that put this stuff out in a satisfactory way?

Talking about nutrients, you get a small lake, and what would happen?

On the other hand, the other solution is the holding tank operation, and the holding tank operation assumes an adequate shore facility and the kind of shore facility that does not get dumped, as the doctor pointed out, around the bend, or the guy does not dump his tank around the bend before he gets to shore.

In other words, I think what happened in this field is that the States and we both recognize we have a pretty tough problem, and I am not sure that a diversity of regulation and equipment might not be in order until we know something a little more definite about this problem. I don't think that this is a detriment, considering the present stage of the art.

DR. HARGRAVES: Well, this arose because of one of our larger small inland lakes, because they were concerned about pollution, but it did not take out the nutrients, as you can see, though it may have helped some with the chlorination, although I have a friend who has shown me that he macerates, drops in a little chlorine, and it is out in the water in 30 seconds. There is no holding time and it is not satisfactory.

MR. STEIN: There are devices on the market now, Doctor, that provide a holding time on a small boat for about three or four flushes, and this provides a sufficient time.

The difficulty is that you run this around and you try this and put this on a bigger boat, and you try to put them on the Coast Guard boats, and all the boys hit the deck on a watch at about the same time, and those things are being flushed constantly. You don't have the holding time. Or, people will go on a larger boat and have a party, or something, and you know what happens.

DR. HARGRAVES: That's right.

MR. STEIN: So I think by just a few of these points, you recognize that we have not solved this problem. This is really a difficult one.

I think that Wisconsin and Minnesota, because of all your waters and your lakes, are among the leaders in the country, and, goodness knows, we hope one of you is going to come up with a solution that we can adopt.

We are trying to experiment and do this, and I am sure that if we come up with something that works, you will adopt it, but I would hesitate for the conferees to put out a program that tends to be definitive in an area which is still very tentative.

DR. HARGRAVES: Well, I would feel that we ought to leave it as is, with each State in which the boat is registered having its own.

DR. ODEGARD: We have been working on this problem, as you know, in the Minnesota-Wisconsin Boundary Area Commission, and we have come up with a solution which we are presenting to both States.

We are not organized as a lobbying group and we are not very persuasive, so there is no telling what will happen to it, but this has been attempted and I think that they feel this is as good an answer as is written here.

MR. STEIN: If there is no objection, could we move on to No. 14?

MR. MUEGGE: Mr. Chairman, I would like to see the second sentence stricken in its entirety.

MR. STEIN: The second sentence?

MR. MUEGGE: The second sentence completely eliminated.

MR. SMITH: What happens to the Federally licensed craft?

MR. MUEGGE: That license does not regulate the toilets.

MR. SMITH: It does, as far as we are concerned.

MR. MUEGGE: Well, you allow it.

MR. SMITH: We have no control over Federally documented craft.

DR. HARGRAVES: There are many friends of mine who have large enough craft that are Federally registered, and they do not fall under our jurisdiction. They have complied, but they tell me that they did not have to.

MR. SMITH: I can't see why the Federal Government shouldn't have to take some responsibility. In fact, they should be the leaders in this field.

MR. STEIN: Are we in agreement the way it stands, or do you want it out?

The Federal conferee I think would have no objection either way.

MR. MUEGGE: Well, I don't think they can operate.

MR. STEIN: You know, in this field we have been promoting, as far as we can, State regulations.

I want to put this to you, because this is always what the lawyer's job is. What we are dealing with is with the facts, as I have stated, and we are dealing with the art. I think we have to recognize -- and I would recognize -- that if Minnesota had the belief that they didn't control Federal craft and wanted to make a charge on the Federal Government to do that, I don't know in the long run that you would be satisfied with that.

I would like and hope that we would try, for the time being, to put this under State regulation rather than Federal regulation, but if Minnesota wants us to take a whack at this, we will be delighted to.

MR. HOLMER: Why don't we at the end of that sentence add a phrase which says, "as well as to the State agencies."

"Federally licensed watercraft are to provide treatment satisfactory to the Federal Government as well as to the State agencies."

MR. STEIN: How about that?

MR. POSTON: I just indicated to Dr. Hargraves that I felt that we would require, as far as we are able to, and I think we have a lot of teeth in our Executive Order, treatment at least equivalent to the treatment required by the State.

MR. SMITH: This is just what the statement says, "as well as to the State agencies."

MR. STEIN: You know, let me tell you, fellows, you are kidding yourselves here.

We may be able to require that kind of treatment on the Federally owned boat. The notion that an Executive Order or the Federal Government is going to require that on a Federally licensed boat is a horse of a different color.

I think the whole thrust of this has been that the States will regulate these facilities on the boats and not us.

Of course, when the things get beyond the kind of a pleasure craft and you get into a big ship, that is a different story, but in the kind of boats that you are talking about here, I think that the notion is that the States are going to have the chance to do this.

Now, I very much suspect if the States fall down on this job, there will be a movement to Federal regulation, but that time has not come yet, and I would hope the States would take up the slack and we would not have to do it.

MR. POSTON: Do you mean, Mr. Chairman, that if the State has a requirement for certain treatment on the pleasure craft and this particular pleasure craft decides to go to the Federal Government for its license, that you would not require equivalent to what the State has?

MR. STEIN: I don't know that we would or we wouldn't, but I don't see that the Executive Order requires us to do that, because they are dealing with Federal installations and Federally-owned operations, not private boats that are licensed by the Federal Government.

We do not handle the licensing. This is outside our jurisdiction, and we would be speaking for another Federal Agency. I can't speak for them, but I don't see anything in our order which will give us jurisdiction over that, and I don't want to leave a false impression that we are going to take up a job when we don't have it.

As a matter of fact, the whole theory, again as was pointed out, is that this should be, we hope, a State regulation. I think a boat, whether it is licensed by the

Federal Government or by a State, if it operates in a particular State's waters, should be subjected to the sanitary requirements of that State.

MR. POSTON: I'll buy that.

MR. STEIN: If we can go on, let's go on to 14.

MR. PRINTZ: "14. It is recommended that garbage or refuse not be dumped along the banks of the rivers and no open dumps be allowed on the flood plain. River banks now used as dump sites should be restored to an esthetically acceptable condition."

MR. STEIN: Any comment or question? If not, let's move to 15.

DR. ODEGARD: There is another place in here where you request somebody to report after two years to this conference.

I wonder if there is any sense in having proper authority report through investigation of these refuse dumps, and if nothing happens, that there be a follow-up?

DR. HARGRAVES: Our experience is that the general public reports these faster than anybody can investigate them in our State.

As a matter of fact, they have circulated what was a four-page memorandum to all municipalities and different groups, and I think we are getting very good cooperation. It is new, but I think we will get rid of the dumps along the shores or edges of the river before long.

MR. STEIN: I think, as a lot of the States have agreed, that at the conclusion of the conference you may want to have a series of progress meetings at six-month intervals to see what has happened. Then you can pick this up, and, of course, you pick up various other things.

But this is something that you have to determine, and the Secretary of the Interior may decide to do that anyway if he wants to keep checking on progress.

I think this applies to many things here, such as the reporting that you indicated on that two-year basis, which was on stormwater, and that is because there was an unresolved kind of operation where someone had to come up with a plan.

I think Paragraph 14 comes pretty much as a resolution, and it seems to me that if we put our minds to it, we might come back in six months or a year and be able to have that under control as something that has been done.

For example, our experience on the Missouri River, where we had all these open dumps, where garbage and refuse was collected in the city and dumped in the river, and dumps put on the side of the river, with bulldozers pushing the material into the river, is that when it got too high this was corrected, long before the cities and industries had waste treatment.

This is something the people can see and they push to get it corrected.

MR. MUEGGE: Chairman Stein, Wisconsin law would not permit dumping on the flood plain.

MR. STEIN: Right.

Well, what do you think of that? How is Minnesota on that?

MR. SMITH: We will permit sanitary land fills on the flood plain under certain conditions.

We feel the way it is worded now, that this is satisfactory to Minnesota.

MR. MUEGGE: Why shouldn't this be the same as the others we have had, which would conform with the State requirements?

MR. SMITH: You would qualify this by stating the State requirements?

MR. MUEGGE: Yes.

MR. STEIN: Do you want to do that?

DR. JELATIS: What is the change in that now?

MR. STEIN: Do you have open dumps on the flood plain now, Mr. Smith?

MR. SMITH: We may have, but we are correcting these and we will not permit any more, so this part of it there is no question about.

Apparently, it is the sanitary land fill. We.

will permit sanitary land fills on the flood plains under certain conditions. Actually, that last sentence --

MR. STEIN: Why do we need the last sentence?

MR. POSTON: You mean "river banks now used as dump sites should be restored to an esthetically acceptable condition"?

MR. STEIN: Are we using some river banks as dumps right now?

DR. JELATIS: Mr. Chairman, it seems there is a little confusion. We are talking, I believe, about the last sentence in the original Summary Report, that says, "Present open dumps on the flood plain should be converted to sanitary land fills operated acceptably to the appropriate State agencies."

That language has been eliminated from the proposed new draft. Was that intentional?

MR. MUEGGE: Well, any dumping on the flood plains should be compatible to State requirements, would be a better way of putting that.

MR. SMITH: All right.

MR. STEIN: The difficulty that I see with that, gentlemen, is that the State requirements in Minnesota now have allowed open dumps. You may not permit any.

I don't think we are achieving anything. I think we are further ahead here when we say there are no open dumps on the flood plain.

This is satisfactory to Mr. Holmer, and it is to Wisconsin, so we will move on to No. 15.

MR. POSTON: We will leave it as it is?

MR. STEIN: As it is. Yes.

Would you go on to 15?

MR. PRINTZ: "15. It is recommended that municipalities, industries, and miscellaneous waste sources upstream from and outside of the conference area on the Mississippi, Minnesota and St. Croix Rivers, and their tributaries be sufficiently controlled so that waters entering the conference area conform to Recommendation No. 2."

MR. SMITH: I have a question, Mr. Chairman, as to what is meant by "miscellaneous waste sources."

MR. STEIN: I'm with you.

MR. POSTON: How about a cattle feeding yard?

MR. STEIN: I don't think that is miscellaneous. If you want to put "other" --

MR. POSTON: It isn't a municipality.

MR. STEIN: You can put "other."

MR. SMITH: Our question is, how are you going to control some of these? Are these controllable?

MR. STEIN: A cattle feeding operation? Mr. Smith, we have gotten that at other conferences.

MR. SMITH: Would you change the word "sources" to "discharges"?

MR. STEIN: Yes. How about "other"?

MR. PRINTZ: Mr. Chairman, there we were thinking of isolated homes that may be discharging to the rivers, which are neither municipal nor industrial, but are a miscellaneous waste discharge.

MR. STEIN: If you mean to say domestic and industrial waste discharges, that would make sense and that would cover it.

I think a cattle feeding lot is an industry.

You always raise a question when you have the word "miscellaneous." You know, again, whenever someone sets up a file or a procedure in our agency and they put down "miscellaneous," I know they have failed and they have not categorized it.

Instead of "municipalities and industries," why don't you say "domestic and industrial waste discharges"? All right?

MR. DAMON: Would you repeat that, Mr. Chairman?

MR. STEIN: "Domestic and industrial waste discharges."

MR. SMITH: "Domestic and industrial"?

MR. STEIN: "Waste discharges."

DR. ODEGARD: Mr. Chairman, is this provision applied to outside of the area? Is there a comparable provision applied to, say, a house within the area?

MR. PRINTZ: I don't think so.

DR. ODEGARD: Maybe we could insert a word then.

MR. STEIN: It is covered, isn't it, "from and outside"?

DR. ODEGARD: "Upstream from and outside," but not within.

In other words, if a feedlot for cattle were within the area, it is not covered by this unless it is covered some place else.

MR. SMITH: It is industry and would be covered under "industry."

MR. STEIN: We could strike out "upstream," "from and outside." Do you want to strike out "upstream"?

DR. HARGRAVES: The whole thing is to keep from contaminating this with upstream effluents.

MR. STEIN: Let me ask you this: Haven't we got all the significant houses in this area covered by this? I don't know that we are not straining at something here. After all, you are in a metropolitan area.

MR. HOLMER: That is true for Minnesota.

MR. STEIN: How about Wisconsin?

MR. HOLMER: Do we have a lot of cottages isolated?

DR. ODEGARD: Oh, yes, and also in Minnesota. There are whole communities in Minnesota.

DR. HARGRAVES: Would you go along and just add "municipal, industrial or domicile"?

MR. POSTON: If you put "domestic" in, "domestic" would take care of the domiciles.

DR. HARGRAVES: Fine. We are talking about in this area, you see, and this relates to outside of the area. This will prevent tributaries to the Minnesota and to the Mississippi from bringing in a higher contamination than we permit in the rivers.

DR. JELATIS: This section is headed "Upstream Bacterial Control" in the report.

MR. STEIN: Yes.

DR. HARGRAVES: Dr. Odegard brings up the point that we have inside the territory that we are talking about a single domicile.

MR. STEIN: All right. Again, let's try it.

"Domestic and industrial waste discharges upstream from and outside of the conference area, as well as those inside the area, on the Mississippi, Minnesota and St. Croix Rivers," and so on, and that will cover that by putting in "as well as those inside the area."

MR. HOLMER: Why don't we add a second sentence there? "Similar standards shall be applied to single domiciles within the area."

DR. HARGRAVES: This would be way back on Page 29 under "Treatment of Municipal Wastes," though.

"All municipalities," and so on, and then you could put "single domiciles with its own little plant."

MR. STEIN: All right. Can we try this? Let's go back to Paragraph 3.

"All municipalities, institutions, and other sources discharging," and then we will have the industries referring back to Paragraph 3 and Paragraph 11, and we will be set. Right?

MR. POSTON: Yes.

MR. STEIN: "3. All municipalities, institutions and other sources."

MR. HOLMER: But that does not affect single residences.

DR. HARGRAVES: How about installation? Is that a house or a workshop or a poultry yard?

MR. STEIN: I think we are straining at something here.

DR. HARGRAVES: I know we are.

MR. STEIN: We are straining at something here that isn't going to be much different and create much of a problem. I think Paragraph 15 deals with the cumulative problem of outside sources.

DR. HARGRAVES: Correct.

MR. STEIN: And I think if we are dealing with individual sources within the area, we are kind of straining, so we are not going to do it.

If there was any credence to the argument that we put forward before when we talked about 90 percent treatment, but it is not going to make a big difference to the small community that is putting out its wastes untreated, why should you fool around with a single house?

If that is the case, with that amendment, with that "domestic and industrial," we will go on to Paragraph 16.

MR. PRINTZ: Mr. Chairman, then you have deleted the "miscellaneous waste discharges"?

MR. STEIN: Yes. Here is how this reads:

"Domestic and industrial waste discharges," and then follow with the rest of it.

All right. Go on.

MR. PRINTZ: No. 16, there was no disagreement at the time of the technical session, and it reads as follows:

> "16. It is recommended that maximum waste loadings from all sources between and including the Minneapolis-St. Paul Sanitary District and

"the South St. Paul Sewage Treatment Plants be such that a minimum dissolved oxygen content of 3.0 mg/l can be maintained during the 7-consecutive day, once in 10-year low summer flow in the reach of river between Mississippi River miles 836.4 and 815.2. To attain this, combined wastes loads from these sources should not exceed 68,500 pounds/day of 5-day (20°C) BOD, exclusive of combined sewer overflows. Suspended solids loadings discharged to this reach (exclusive of combined sewer overflows) should not exceed 85,500 pounds/day in order to minimize sludge deposits."

MR. STEIN: Any comments?

MR. SMITH: Mr. Chairman, I wonder if Mr. Printz might review briefly how the 68,500 pounds was obtained as far as the 5-day BOD was concerned?

MR. PRINTZ: Yes. The 68,500 was obtained based on the studies, the assimilative capacities of the waters during our study, projecting the dissolved oxygen requirements to those flow conditions of 7-consecutive day once in 10-year, and determining the maximum allowable loading from that reach of the river.

This maximum allowable loading from that reach of the river would be such that the required dissolved oxygen content would be maintained in the critical reaches of the

Mississippi River.

MR. SMITH: In doing this, certain assumptions had to be made concerning the dissolved oxygen and the effluents from these treatment plants. Is that correct?

MR. PRINTZ: Yes, that is correct, and these are all indicated in the report on findings, what these were, and in the supplemental report furnished to you at the last session.

MR. SMITH: And it is possible, as more treatment facilities are provided, that we may find that the 68,500 pounds may be too restrictive, and, on the other hand, it may not be restrictive enough. Is that right?

MR. PRINTZ: I would like to think of the 68,500 as being a guide to the State in determining what the maximum allowable contribution can be to that reach of the river, and it would be up to the State then to apportion this out and take into consideration new treatment plants.

This is more of a guide indicating what we consider to be in the maximum amounts of loadings which can be put into that river and still maintain these oxygen conditions at the critical period during this flow.

MR. SMITH: You don't feel then that this is an arbitrary figure?

MR. PRINTZ: No, sir, we do not.

MR. STEIN: Are there any other comments or questions on this? Can we accept Paragraph 16?

(No response.)

MR. STEIN: Without objection, we will go to 17.

MR. PRINTZ: No. 17 reads as follows:

"17. The loadings to the waters of the conference area of substances which impart unpalatable flavor to food fish or result in noticeable offensive odors in the vicinity of the waters, be restricted and controlled so as to enhance the quality of the waters above that which will result when abatement works currently under construction and presently inoperative are completed and to prevent such conditions from occurring. If such conditions continue to exist following installation of the abatement works recommended by the Conferees, further reductions in phenolic loadings will be required."

MR. STEIN: Any comments?

MR. MUEGGE: Chairman Stein, I wonder why they went from "offensive odors" to "phenolic loadings" in the last sentence?

MR. STEIN: I get your point. Why did you do that?

MR. PRINTZ: We did use "phenolic" in the last sentence, but not in the first.

MR. STEIN: Why did you switch in midstream?

MR. PRINTZ: We recognize, sir, that there may be other substances besides phenolics, either individually or in combination with them, which would impart unpalatable flavor to food fish.

We have stated that if the conditions continue to exist after abatement, the only way in which we can attempt to correct this is to put in specialized treatment. This specialized treatment would have to be, in our estimate, applied toward a phenolic reduction.

MR. STEIN: But Mr. Muegge has pointed out that if we couch this in general terms, such as "further reductions in taste-producing substances will be required," what is wrong with that?

MR. PRINTZ: Nothing. "Further reductions in taste-producing substances will be required."

MR. STEIN: Let's try that.

Are there any other changes or modifications suggested in Paragraph 17?

(No response.)

MR. STEIN: If not, let's go on to 18.

MR. PRINTZ: On 18 there were no changes. It reads as follows:

"18. It is recommended that an engineering study of the Minneapolis-St. Paul Sanitary District "sewerage system be undertaken to determine what changes are required to make unnecessary the practice of bypassing wastes periodically for the purpose of cleaning the inverted siphon under the Mississippi River."

MR. MUEGGE: Hasn't that previously been covered somewhere?

MR. PRINTZ: No, sir.

MR. SMITH: These are under specific recommendations.

MR. STEIN: When do they do this? When do they report?

I have a little trouble with this recommendation.

MR. PRINTZ: I am trying to recall if this was changed slightly at the time of the last session. I believe we included the old wording. I think there was new wording.

May I re-read that? At the time of the last session, that last sentence was reworded, so that it reads as follows:

"An engineering study of the Minneapolis-St. Paul Sanitary District sewerage system be undertaken to determine what changes are required to make unnecessary the practice of bypassing wastes periodically for the purpose of cleaning an interceptor line to the plant."

There is a misunderstanding, I believe.

MR. STEIN: This is so involved to a third person. Again, I am just speaking here for the purpose of clarity.

Who is to undertake the engineering study?

MR. PRINTZ: The Sanitary District.

MR. STEIN: When are they to do it, and when are they to prepare the report?

I think we have to clarify that. If you want the Sanitary District to do it, let's say it.

MR. POSTON: Mr. Chairman, I recommend that we add one sentence on to the end of this paragraph that says the study would be undertaken and a report made to the conferees within one year's time.

MR. HOLMER: Isn't that covered under the remedial program on Page 6?

MR. STEIN: Have you got that covered anywhere else, Mr. Printz?

MR. PRINTZ: Nowhere else.

MR. STEIN: In order to make this meaningful, I would say that the suggestion that the Minneapolis-St. Paul Sanitary District undertake this study and that a report be made to the conferees a year from this date, might do it. It is suggested that we can even simplify the language, and I think it would be better from a literary standpoint.

"An engineering study of the Minneapolis-St. Paul Sanitary District sewerage system be undertaken by the District to determine what changes are required to make unnecessary the practice of bypassing wastes periodically for the purpose of cleaning the interceptor under the Mississippi River, and a report made to the conferees a year from this date."

MR. SMITH: Should it be this date or --

MR. STEIN: A year from the issuance of the summary.

DR. JELATIS: Mr. Chairman, I think Mr. Printz suggested that it be "interceptor" and not necessarily "under the Mississippi River."

MR. STEIN: All right, "cleaning the interceptor."

Is it clear what we mean by "interceptor"? Which interceptor?

MR. PRINTZ: I believe the State and the Sanitary District each are aware of it.

MR. STEIN: No. Our document has to speak for itself.

MR. PRINTZ: Yes.

MR. STEIN: Again, it has to be self-contained. You are going to have to ask the Secretary to sign it, and a lot of other people to look at it.

Is "interceptor" enough, or do we have to identify the interceptor?

MR. PRINTZ: I think it is sufficient.

MR. STEIN: By terming it "the interceptor"?

DR. HARGRAVES: It is the interceptor to the plant.

MR. PRINTZ: It is the interceptor to the plant.

MR. STEIN: To the plant. All right.

If there are no further changes, may we go on to 19, Mr. Printz?

MR. PRINTZ: "19. It is recommended that the BOD removal efficiency at the Hastings, Minnesota primary sewage treatment plant be increased from the 5 percent figure found during the survey to minimum of 30 percent until secondary biological treatment facilities are in operation."

MR. STEIN: Any question or comment?

MR. SMITH: I think, if you will recall, Mr. Chairman, the representative for Hastings questioned whether he could actually obtain 30 percent.

MR. POSTON: I thought the Hastings representative indicated that he was dissatisfied with our 5 percent figure, and that he could get as high as 30 percent.

MR. SMITH: I would question whether he can actually obtain the 30 percent.

MR. STEIN: What would be your suggestion?

By the way, I distinctly recall that he objected to the 5 percent figure, and maybe we can drop that out, because if they are going to increase it, I think the report calls enough attention to that, and we are on our way to a clean-up.

What do you think they should do, if anything?

MR. SMITH: Well, certainly the 30 percent or the maximum obtainable under the present facilities. I am not sure that this will be the 30 percent.

MR. PRINTZ: I think this is the intent of the investigators, that it be increased to as high as possible under the conditions.

MR. STEIN: Can we say this?

"The BOD removal efficiency at the Hastings, Minnesota primary sewage treatment plant be increased to the maximum feasible under the present facilities until secondary biological treatment facilities are in operation."

How about that?

MR. SMITH: This is fine. Actually, those secondary facilities should be in operation within a year or so anyway.

MR. STEIN: Is that all right?

(No response.)

MR. STEIN: All right. Let's go on to Paragraph 20 now.

MR. PRINTZ: "20. It is recommended that the Water Treatment Plants" --

this needs to be reworded, sir, so that it is in context with the recommendation. It refers to the water treatment plants of the City of Minneapolis. It would read:

> "It is recommended that the treatment facilities at the water treatment plants of the City of Minneapolis be provided capable of producing an effluent with a suspended solids concentration not exceeding that found in other treated effluents being discharged to the same reach of river. At no time should the daily average suspended solids concentration exceed 50 mg/l."

MR. STEIN: Is this agreeable?

MR. SMITH: This is agreeable as far as it goes. We would like to add one statement.

MR. STEIN: Yes.

MR. SMITH: Mr. Chairman, we would like to add to this:

"The present lime disposal facilities for the City of Minneapolis will not be adequate for more than several more years. Therefore, a study should be conducted immediately to determine the procedures for the city to follow in disposal of their lime."

MR. STEIN: Yes. I have one suggestion to make:

"A study shall be conducted by the city."

MR. SMITH: "By the city."

MR. STEIN: Right. I think we have to put the responsibility there.

DR. HARGRAVES: They should start it now.

MR. STEIN: Yes.

DR. HARGRAVES: Because time is running short.

MR. STEIN: Right. It should be started immediately.

Why don't you put that down? All right? Is that agreeable?

DR. HARGRAVES: That is for disposal or recovery facilities necessary.

MR. STEIN: Yes. May we go on to Paragraph 21?

MR. PRINTZ: No. 21 received no changes, and it reads:

> "21. It is recommended that the industries in the South St. Paul area (Swift Company, Armour & Company, and the St. Paul Union Stockyards) provide an effective method of control and correction of direct discharges to the Mississippi River. These include so-called clean waste waters, watering through overflows, truck washing wastes, surface drainage, and hog pen flushings. The coliform

"densities of any of these discharges should not exceed 5,000/100 ml once the control devices are in operation."

MR. STEIN: Any comment or question?

(No response.)

MR. STEIN: If not, may we go on to 22?

MR. PRINTZ: No. 22 is changed, I believe, by deleting the last bit of clarifying information. It will now read:

> "22. It is recommended that additional treatment be provided at the Northwest Cooperative Mills to reduce the suspended solids concentrations of the compositing pond effluent to substantially the same levels found in other effluents being discharged to the same reach of river after satisfactory treatment. In no instance should the daily average suspended solids concentration exceed 50 mg/1."

MR. STEIN: Are there any comments or questions?

You know, if you fellows will pardon me an aside at this point, since we are hitting 50 milligrams per liter so much here, what was all the fuss about before?

MR. POSTON: The question was, I think, that it was conceded early in the game here that we shouldn't go as low as 30.

MR. STEIN: All right, but evidently we let this in the back door.

Let's go on with 23.

MR. PRINTZ: No. 23 was changed only for grammatical purposes, and it will read:

> "23. It is recommended that any additional facilities constructed for the Foot Tanning Company's waste produce an effluent of a quality acceptable to the Minnesota Water Pollution Control Commission (MWPCC) and in conformity with recommendations in this report. The possibility of discharging the settled waste to the Red Wing sewerage system in lieu of additional treatment should be considered and a report on the conclusions of such questions submitted to the MWPCC."

MR. STEIN: Submitted by whom?

MR. PRINTZ: By the tanners.

MR. STEIN: All right. Let's say that, "submitted by the tannery."

May we go to 24?

MR. PRINTZ: No. 24 received a minor change to accommodate the suggested change by the State of Minnesota. It reads as follows:

> "24. All sanitary wastes of the Green Giant Company be discharged to the municipal sewer system

"and the miscellaneous process wastes be handled as specified in Recommendation No. 11. An additional pump for the handling of process wastes be provided for standby purposes at the waste water sump for use when the main pump fails."

MR. STEIN: Can we strike that "miscellaneous" and make it "other process wastes"? All right?

MR. SMITH: I don't know whether the last sentence has any particular place in this type of recommendation. There is nothing wrong with it, but I don't know that we need it.

MR. STEIN: Yes. How about that?

MR. PRINTZ: Well, this was the source of some difficulty due to pump failure before with no standby pump.

We felt that rather than have this occur, it might be amended and corrected in this manner.

MR. STEIN: Do you have any objection to that?

MR. SMITH: No.

MR. STEIN: All right. We will let it go.

Go ahead with No. 25.

MR. PRINTZ: No. 25 received no changes, and it reads as follows:

"25. It is recommended that maximum waste loadings from all sources between and including the American Crystal Sugar Co. and the Rahr

"Malting Co. be such that a minimum dissolved oxygen content of 3.0 mg/l can be maintained during the 7-consecutive-day, once in 10-year low winter flow in the reach of river between Minnesota River miles 29 and 0. To attain this, combined waste loads from these sources should not exceed 12,000 pounds/day of 5-day 20°C BOD during winter when there is no ice cover in the vicinity of the Blackdog power plant. At times of complete ice cover, the maximum waste loading of 5-day (20°C) BOD from these sources should not exceed 6,500 pounds/day. In no case, however, should treatment efficiency be less than that specified in the General Recommendations."

MR. STEIN: If there is no objection and no comment, that is accepted, and we will move to Paragraph 26.

MR. PRINTZ: No. 26 is changed only to include a time period as opposed to a river flow, and it will now read as follows:

"26. It is recommended that a water temperature of not greater than 90°F be maintained in the lower Minnesota River. To attain this, the existing cooling pond of the Northern States Power Company Blackdog Plant should be utilized to its fullest extent between May and October, inclusive.

"During this period the thermal addition to the Minnesota River should not exceed 13.5 billion BTU/day.

MR. STEIN: Thank you.

It has been suggested that the conferees might want to consider waiving the reading of Nos. 27 through 37, which deal with Nike site bases and lock and dam sites, and so forth and so on.

Is there any objection from the conferees that this be eliminated? If there is anyone who has any comment on any of these, we will be glad to take it up, but if not, will you proceed? We will consider those as acceptable and we will move on to Paragraph 38.

MR. MUEGGE: Chairman Stein, I assume they all have secondary treatment?

MR. PRINTZ: I did not understand the question.

MR. STEIN: He assumes they all have secondary treatment now?

MR. PRINTZ: They will all have treatment as called for by the recommendations.

MR. STEIN: They will.

(Laughter.)

MR. PRINTZ: That is a very positive statement.

MR. HOLMER: And the effluents will meet the requirements?

MR. PRINTZ: Yes.

MR. STEIN: All right. The record will contain the paragraphs we have deleted.

"27. U. S. Army Nike Missile Installations. A minimum of one hour per day be devoted to proper treatment plant operation and maintenance.

"28. U. S. Army Nike Missile Installations. The treatment facilities be operated such that removal efficiencies approach those for which the plants were designed.

"29. U.S. Army Nike Missile Installations. Laboratory analyses and records maintenance consistent with recommendations of the Conference of State Sanitary Engineers for plants of .25 mgd capacity be carried out. A report of these functions, including results of analyses, are to be furnished to the Federal Water Pollution Control Administration upon request.

"30. U. S. Army Nike Missile Installation, Nike Site No. 40, Farmington, Minnesota. Discharge of effluent to the roadside ditch be terminated as soon as possible. The present outfall sewer line should be extended so as to discharge the effluent into the unnamed creek which at present ultimately receives the waste.

"31. U. S. Army Nike Missile Installation, Nike Site No. 40, Farmington, Minnesota. Continuous chlorination facilities be activated immediately with disinfection sufficient to produce a free chlorine residual of 0.5 mg/1 after a 15 minute contact at peak flow rates.

"32. U. S. Army Nike Missile Installation, Nike Site No. 90, Bethel, Minnesota. It is recommended that continuous chlorination facilities be activated immediately with disinfection sufficient to produce a free chlorine residual of 0.5 mg/1 after a 15 minute contact at peak flow rates.

"33. U. S. Air Force Air Defense Command, Osceola, Wisconsin Station. It is recommended that a schedule of maintenance practices be instituted consistent with accepted procedures for operation of oxidation ponds so as to insure satisfactory treatment.

"34. U. S. Army Corps of Engineers, Locks and Dams. Present plans be continued concerning improvement or replacement of inadequately sized treatment facilities.

"35. U. S. Army Corps of Engineers, Locks and Dams. At stream flows of 7,000 cubic feet per second (cfs) or less (as measured at the St. Paul "gauge), as much water as possible be passed over bulkheads before the Taintor gates at Lock & Dam No. 2. At flows of 3,000 cfs or less, the equivalent of the inflow to Pool No. 2 should be passed over the bulkheads.

"36. U. S. Army Corps of Engineers, Floating Dredge Thompson. It is recommended that a planned schedule of analyses be continued on effluent from the waste treatment facilities so as to insure adequate removals prior to overboard discharge of effluent.

"37. U. S. Air Force 934th Troop Carrier Group, Officers Club. It is recommended that the present single compartment septic tank be changed to a two-compartment tank. A subsurface tile field of adequate size should be installed to supplement the present field."

MR. STEIN: Will you go ahead, Mr. Printz?

MR. PRINTZ: Yes. No. 38 is recommended by the Federal conferee and it reads as follows:

"38. It is recommended that the action taken by the State agencies will be reported to the conferees at six-month intervals at public meetings to be called by the Chairman of the Conference."

MR. STEIN: Any questions or comments?

MR. HOLMER: I wonder if the action taken by the Federal agencies should also be reported?

MR. PRINTZ: It would be.

MR. STEIN: Let's amend it to state "taken by State and Federal agencies." All right.

MR. MUEGGE: How about the industries?

MR. STEIN: Presumably you will report for the industries, or you can have them called on.

Now, again, here is the situation: What we prefer to do is, as you know, let the State agency be in control and handle the meeting as they wish. They can manage their own time. They can make a report for them all, or call on them individually, and sometimes they use a combination.

Mr. Printz, I think we can push on.

MR. PRINTZ: There are no changes made in the schedule for remedial program.

Would you like me to read this, Mr. Chairman?

MR. STEIN: Yes.

MR. PRINTZ: "Schedule for Remedial Program

"MUNICIPALITIES, INSTITUTIONS, AND INDUSTRIES

"In light of the excellent progress the MWPCC has made in making various industrial firms and municipalities aware of the need for abatement facilities, the following time schedule for the foregoing remedial program is recommended. The time "periods given commence with the issuance of the Conference Summary by the Secretary of the Interior

"a. Submission of preliminary plans for remedial facilities within 6 months.

b. Submission of final design for remedial facilities within 12 months.

c. Financing arrangements for municipalities completed and construction started within 18 months.

d. Construction completed and plants placed into operation within 36 months.

e. Existing schedules of the State agencies calling for earlier completion dates are to be met."

MR. STEIN: All right. Let's stop there.

Are there any comments?

MR. POSTON: In the first sentence, do we limit this to the Minnesota Water Pollution Control Agency?

MR. SMITH: They are the ones who are making the progress.

(Laughter.)

MR. HOLMER: Although I am pleased, Mr. Chairman, that the recommendations of the Summary Report cast great credit on the work that has already been achieved in Wisconsin, I would suggest that the first sentence be amended as follows:

"In light of the excellent progress that the States of Minnesota and Wisconsin have made in making various industrial firms," etc.

MR. POSTON: We are unanimous in this.

MR. STEIN: That seems to be one of the most popular suggestions made today.

All right. I think that is appropriate.

Are there any other comments or suggestions?

DR. HARGRAVES: Yes, Mr. Chairman.

This particular schedule for remedial programs seems to us to be too short-lived. Minnesota has a lot of cold weather. It has a lot of periods when it can't do work as they can in the South. They have periods when contracts have to be let, and so on, because depending upon the weather, not only that, but I feel as a scientist that there are still a number of things to be found out about sewage disposal.

There are new ideas being tried out in Minnesota. We gave Wilson and Company a couple of extra years to come through with an anaerobic plant, which has turned out, I think, to be a contribution.

I think at the present time the people in South St. Paul, as well as in Minneapolis in the Sanitary District, also have things which they have built and are trying out, and they may need modification.

In our experience, we have issued many, many orders and called communities in to get them to correct their frailties during this period of time.

These times are too short for large operations, we feel, and I would say that we ought to loosen up the first three, and we ought to shoot for about five years for a bargaining point for time to get the entire thing into operation.

This does not mean that we are going to condone industries or municipalities dragging their feet. I firmly believe that they need more time, enough time to do the job right, and I think I can say that the Minnesota Water Pollution Control Commission will ride herd on them and see that they are not dragging their feet, and that they will come through, if it is all right with the conferees to extend this time for the type of thing I suggested.

I think this is rather unreaslistic.

MR. STEIN: Are there any other comments or questions?

MR. WILSON: Mr. Chairman, might I add to what Dr. Hargraves said?

As I mentioned at the earlier session of the conference, the Water Pollution Control Commission is already involved in one appeal with the State Supreme Court which raises some very important questions that will bear on the solution of some of the problems.

I won't say that all of these problems are involved in litigation, but some of the important problems are involved in litigation, and it will be impossible to make the final settlement of them until that litigation is concluded.

There are also other cases on the way into District Court, and nobody knows how long those will take, or whether they will be appealed to the Supreme Court or not.

Those are simply additional reasons. I think more time, as proposed by Dr. Hargraves, ought to be given, and certainly the Minnesota Commission can be depended on to do its utmost to expedite the program, but there is no use of imposing a limit that is probably practically unattainable.

DR. JELATIS: Mr. Chairman?

MR. STEIN: Yes.

DR. JELATIS: I recognize that there are problems of litigation that would stretch out some of these things an indeterminate amount of time, but it would seem desirable to establish some sort of guideline as to what is expected, and perhaps the Water Pollution Control Commission, who are the ones involved in this, could be given some leeway by setting ranges of periods for each of the single time limits specified, which they could apply in their discretion to plants that might be simple plants. They could request preliminary plans almost in six months.

I would suggest, as a talking point, that on Item "a," preliminary plans, instead of six months it read "six to eighteen months."

For Item "b," final design, instead of twelve months, make it twelve to twenty-four.

For financing arrangements, instead of eighteen months, make it, say eighteen to thirty.

For final completion and operation, instead of thirty-six months, say thirty-six to sixty. This would seem to give them some flexibility. Some plans could be in at an earlier time.

MR. STEIN: Mr. Holmer?

MR. HOLMER: Can you go forty-eight on that last one?

DR. JELATIS: Well, Dr. Hargraves suggested the sixty as the final one, and I just tried to fit these in with that.

MR. SMITH: Let's compromise on fifty-four.

(Laughter.)

MR. STEIN: It is between three and five years. I think you have a good proposal, if you come up with forty-eight. Four years is a long time.

MR. POSTON: You know, Mr. Chairman, we have been at this for three years already, and we gave a lot of credit here a little earlier to the States of Wisconsin and Minnesota for their progress that they have made, and I feel that these three years that have gone so far, there has been a lot of work done towards planning and getting ready.

This should be very definitely taken into consideration here, and maybe you can even cut this a little bit.

(Laughter.)

DR. HARGRAVES: You forget you took three years to do the study.

MR. POSTON: In the meantime, you were working on it.

MR. STEIN: Let me put it to you this way: This is a little longer than I thought about this problem. Let's look at this individually.

As a matter of fact, on that eighteen months for preliminary planning, I think if we made it six to twelve months, we could know they are on the road, because we should know in a year whether they mean business.

Now, on the second one, final design, it would seem to me twelve to twenty-four months is all right, and on the other, financing arrangements, making it eighteen to what?

DR. JELATIS: Thirty.

MR. STEIN: How long is that?

DR. JELATIS: Two and a half years.

MR. STEIN: That adds twelve months.

MR. POSTON: How about two years for financing? From now for two years is quite a bit of time for financing.

MR. HOLMER: Not after you have had your plans.

DR. JELATIS: Mr. Chairman, I think it was pointed out that some of these plants may require some preliminary studies of treatment methods that may take a year before they determine what the final plant is going to look like, at which time they will start making preliminary designs.

MR. STEIN: I understand that, but I am trying to get a consensus here and hit a balance.

I think the basic thing is that if we come around at six-month intervals, we can really see if someone is moving. That is why I think that six to twelve months is all right. If anyone is moving on a pilot study and they need a little more time, we can consider that at the first or second progress meeting.

The second, submission of final design, twelve to twenty-four months, is all right. We have given them two years.

The next is financing, eighteen to thirty months, but I think in the light of what we are doing and where we go, that construction completed and plants placed into operation within thirty-six to forty-eight months will give us enough leeway.

Considering the slippage we have on these and the notion that we are going to reconsider these every six months, I think that is, compared to other cities, a median time schedule.

When you get beyond that four-year operation, you are dealing with a long-range, large program, and I don't think you have that problem in this area. Some of the cities don't have Pipe 1 and have to go farther, but that is a long time in four years. That is a Presidential term, or governor's term, four years.

(Laughter.)

DR. HARGRAVES: May I ask about this conferees' study [illegible]ecking on progress every six months? Would this mean that we all get together again, or is it just somebody coming in?

MR. STEIN: No. We all get together.

Here is what happens: For example, we just finished one of these in Chicago, and all these places are the same. St. Louis and East St. Louis is the same. We are going into one of these in Buffalo next week.

Obviously, in dealing with a complex situation like this, with the best of intentions, we cannot get everyone moving at the same pace, so what we do is meet every six months.

If there are variances here for good reasons, we arrive at these in a matter of judgment, and we go ahead and we give these variances.

DR. HARGRAVES: Do we arrive at that judgment with this group?

MR. STEIN: Yes.

DR. HARGRAVES: It doesn't have to go back to Washington and then back again?

MR. STEIN: No. If we have a progress meeting, we just put our progress meeting report in and we will consider that as substantial compliance with us.

To give you some ideas -- and I don't want to give you notions on extensions, for example, in Chicago we arrived at the conclusion that the Chicago Sanitary District should have, as the other communities there, year- round chlorination. To develop, as you talked about, a pilot plant to develop an approved method of chlorination would save them, as it is working out, about a quarter of a million dollars a year, which is how much they use.

What we recognized was that it would be foolish to go ahead, once they began grappling with the engineering problem, and we have given them an extension of about a year.

Now, for example, all the major oil companies --

and I mean big oil -- have complied with the recommendations on schedule now. Three of the big steel companies, the top steel companies, are going over and they asked for an extension of about eighteen months, and this is very much involved, since it is an extension of a complete program, but I think they are doing pieces of this and going along with the continuation.

The conferees at the last session did not give the steel companies that extension, but they said we would meet again on September 6th, review it, and if their progress was such that they were really making bona fide progress, that they would consider the extension again.

DR. HARGRAVES: I think Minnesota can live with forty-eight months.

MR. STEIN: All right.

DR. HARGRAVES: But this is the kind of thing that we have when it isn't down tight, and we have to make adjustments.

MR. STEIN: As a matter of fact, I wonder if I can say one thing: I think I was more disposed at the Chicago meeting to give the steel companies the extension than the States were.

MR. HOLMER: Mr. Chairman, I don't know whether it would be appropriate or feasible for the Federal member of the conference to vote with respect to the inclusion of a proposed amendment I am about to make to this section of the report, but I think it is pertinent and germane. It also conforms with the comment which was read into the record from Governor Knowles at our first meeting.

He suggests it might well be appropriate for the conference to record its recommendation that the Congress make available local assistance funds for the construction of waste treatment facilities at not less than the level authorized by the 89th Congress, and that it augment the funds available for expediting mapping of flood plains in both Minnesota and Wisconsin.

In order to give effect to this and to relate it as it is to the procedures suggested here, I would suggest adding under "municipalities, institutions and industries," following Subparagraph e, a new paragraph to read: "These time intervals are subject, of course, to the appropriation of Federal funds for assistance in meeting the costs of construction at a rate at least as great as that authorized by the 89th Congress."

Now, I submit that as a formal proposal for amendment to this Federal-State conference, and will leave the voting on it to your judgment.

MR. STEIN: We can't. This has come up before, and the Congress, as I guess with your Legislature, when we do that we always get the protest -- and maybe they are right.

As Federal people, we can't go around holding a gun up to their heads.

We have had this in several of the other conferences. We would have no objection if you made this a recommendation to the conferees representing Minnesota and Wisconsin.

Let me add to that: The reason we do not join is not because we are out of sympathy with this, but because we are prohibited by law from doing this, and that is beyond our powers.

MR. HOLMER: Well, I so move then, with the permission of the Federal representative to abstain.

MR. STEIN: All right. Then we can say both States, if that is agreeable.

MR. SMITH: Yes.

MR. STEIN: Then we have the six to twelve months for preliminary plans, twelve to twenty-four months for final design, financing eighteen to thirty, and construction completed and plants in operation thirty-six to forty-eight months.

"Existing schedules of the State agencies calling for earlier completion dates are to be met."

Both State agencies, the States of Wisconsin and Minnesota, make the following recommendation --

MR. HOLMER: That "these time intervals be subject, of course, to the appropriation of Federal funds for assistance in meeting the costs of construction at a rate at least as great as that authorized by the 89th Congress."

MR. WILSON: Was that actually authorized, or only proposed?

MR. HOLMER: It was authorized, but not appropriated.

MR. WISNIEWSKI: It was authorized, but not appropriated. I see.

MR. STEIN: This is not an unusual state of events.

MR. WILSON: It is a promissory note.

MR. STEIN: You would do better collecting a promissory note, Chester.

If we are in agreement with that, may we go on to the next point?

MR. PRINTZ: There were no changes on Federal installations.

> "Schedules for Federal installations requiring only operational and maintenance changes shall be initiated immediately. Changes required at Nike Site No. 40 and the Ft. Snelling Officers Club should be completed and made operational within 6 months."

MR. STEIN: How about changing "should" to "shall"?

MR. PRINTZ: All right.

MR. STEIN: Thank you. Let's go on with the next one.

MR. PRINTZ: Modifications.

"It is recognized that modifications may be necessary. These may include:

"a. A lesser time where the control agency having jurisdiction considers that a practical method of control can be in operation prior to the time stated.

b. In a few industries and municipalities some variation from this schedule may be sought from the appropriate State and local pollution control agencies. In such cases after review the Conferees may make appropriate recommendations to the Secretary of the Interior.

c. Any modifications of these recommendations requested by those persons or agencies cited herein shall be taken under advisement by the Conferees. In such cases, after review, the Conferees may make appropriate recommendations to the Secretary of the Department of the Interior."

MR. STEIN: Is there any comment or question?

(No response.)

MR. STEIN: If not, this stands approved.

Are there any other suggestions or comments?

MR. DAMON: Mr. Chairman, let me take a crack at one here. This is a minor one, but how does the first sentence in Paragraph 11 on Page 3 now read?

MR. STEIN: "All industries contributing wastes to the waters within the conference area provide effluents at least equivalent to that recommended for municipalities."

MR. DAMON: It reads to me that if industries can produce more effluents than municipalities, they are ahead of the ball game, or am I wrong?

MR. HOLMER: They dirty these up before they put it out.

(Laughter.)

MR. SMITH: No.

MR. STEIN: I think he has a point. How about "effluent quality"?

MR. SMITH: This is fine.

MR. STEIN: "Effluent quality." All right. That is a point. Thank you. This was not abundantly clear.

DR. ODEGARD: Mr. Chairman, we are coming to the end of the conference at this point, and I have a feeling that there is a big hole left in it, and I don't know how to tell you this except to sort of start in the middle some place.

It has been covered concerning the intent, but I get the impression that now presumably a solution to problems has been pointed to if the solutions aren't there already, but this specific problem of algal growth in the lakes has not been resolved.

I came from the upper Mississippi River Basin in Chicago last week, and they had some rather surprising comments there about the number of domestic animals in the area. I think if you interpolate from their figures, you would have something like domestic animals producing wastes in this area equivalent to about 20 million people, which is really a tremendous source of waste to be spread all over the ground. You add to this the fertilizers that were produced to fertilize the forests, and I think we have lost a very major aspect of the problem.

MR. STEIN: You have. Let's go on with this. Anyone who comes here and thinks we are going to come up with the millenium is wrong.

First of all, we are not dealing with the lakes. The lakes are a harder problem, and here, fortunately, we are dealing with a bunch of rivers.

DR. ODEGARD: I was referring to Lake Pepin.

MR. STEIN: Lake Pepin may be a lake.

Now, I think Mr. Muegge pointed this out. If anyone is going to come to you today and tell you that we have an answer to that algae problem, or weed problem, he is kidding you. The only thing we can do is deal with the art and the science of waste treatment as we know it.

We are not asking anyone to do the impossible. We recognize that the question of enrichment in nutrients in those lakes is a vital one. This has a tremendous priority by our investigatory staff, and our other staff, in trying to get this out.

In dealing with the problem here, sometimes we wear other hats. I know these people do too in trying to cope with this problem.

The problem that we are faced with here is working under a regulatory Act. When we are going out and we are asking people to spend millions of dollars, and sometimes tens and hundreds of millions of dollars on a problem, we are surely not going to ask them to start putting in equipment to try to tackle a problem when we are not sure that we know the answer. This removal of phosphates or control of algae in the lakes in the waters is one.

However, we do know, given the kind of gross pollution that we have in the Twin Cities area, that a considerable, a tremendous improvement, can be made, even if we don't attack the algae problem at this time.

You can be assured that this problem is so widespread that as soon as we get something that shows the least bit of progress, that is going to be put forward.

I don't think this is leaving a hole in the conference. As a regulatory arm, we have to deal with what we know how to do, and what we reasonably can ask these people out here to do.

Now, the next point: I agree we do have a problem on land run-off and agricultural run-off. I think the effects of that are largely -- I wouldn't say conjectural now, but they are not amenable to the kind of precise testing that we have in the other fields.

Again, all of us are working on that, and on this problem I don't want to hold any hope out, necessarily, of an easy solution.

I would suspect that we have so many sources, and this is such a complex problem of land run-off and agricultural run-off, that we very well may have our phosphate removal problem settled before we come to a resolution on that.

What you are doing, though, sir, is raising some very vital long-range problems in pollution control and in environmental control that we know we have.

The reason we did not get to these is, although I think the people at this table are as well equipped as anyone, I don't think anyone in this country is prepared to come up with a reasonable program that can meet these problems at the present time. I think the hardest thing for anyone to say is, "I don't know," and the answer to these questions is, "I don't know." If we don't, we have to do without it.

MR. WILSON: Mr. Chairman, might I just add a comment by way of endorsement to the Chairman's remarks?

It happens that I am a sort of jack of all trades, and besides messing around with water pollution control, I have had quite extensive experience, both administrative and legal, in the soil and water conservation field, right up until now, and have been engaged in drawing some bills for the Minnesota Legislature on that subject. I want to assure Dr. Odegard and everyone else concerned that the leaders in the field of the effects of agricultural run-off are very keenly aware of it. They are not ignoring the problem, and, in fact, they are trying to do all they can to secure better attention to it.

Obviously, it is within the scope of the responsibility of the Federal Department of Agriculture, rather than the Department of the Interior, under which we are working in this effort here. Certainly everyone conversant with that problem is doing everything possible to secure action on it, and I think we are going to see some much more effective action on it than has been devoted to it in the past.

MR. WISNIEWSKI: Mr. Chairman, I will second Mr. Muegge's motion to adjourn.

MR. STEIN: I did not hear the motion, but it is a welcome one.

MR. POSTON: What is the motion?

MR. STEIN: To adjourn.

MR. POSTON: I have one comment.

MR. STEIN: Go ahead. I am not cutting anyone off.

MR. POSTON: This is a kind of a self-serving statement, but I would like to commend the staff of our Twin Cities Project for the work that they have done, and Mr. Bert Printz and their staff for the work that they have done in gathering together first the staff and then the facility, and carrying out these studies cooperatively with the State agencies.

I am very appreciative of what has been done here.

MR. SMITH: We are in agreement, certainly, with that statement.

MR. STEIN: Are there any other comments from this side of the table before we recognize that motion to adjourn?

(No response.)

MR. STEIN: I do think we have made tremendous progress here. What you have seen is a Federal-State program in operation, and I think also you have recognized that the game isn't as simple as you would like to think, but it works.

I do think we have demonstrated that with hard work and appliance to the facts, we can, if we put our minds to it, communicate with each other and achieve results and an agreement.

This is the key to our system of government, where divergent interests such as are represented here and out in the audience have been able to put all their views together and have come up with unanimous recommendations and conclusions. You have to recognize that there are seven pages of closely worded material that the conferees here have come up with agreement and conclusions on, and I dare say -- I speak for myself, but I would bet no one up here could have come to as closely a worded and lengthy an agreement with his wife and come up with unanimous agreement.

(Laughter.)

With that, I want to thank you all for coming.

We stand adjourned.

(Whereupon, at 3:35 p.m., the conference was adjourned.)